A Satyam Roychowdhury Initiative

SOCIO-ECONOMIC STATUS ON IMPULSIVITY AND SENSATION SEEKING: A COMPARATIVE STUDY ON YOUNG ADULTS OF KOLKATA

This dissertation is submitted for the partial fulfilment for the degree of

M.SC. IN APPLIED PSYCHOLOGY (SPECIALIZATIO IN REHABILITATION PSYCHOLOGY)

SISTER NIVEDITA UNIVERSITY

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CERTIFICATE

This is to certify that the dissertation entitled "SOCIO-ECONOMIC STATUS ON IMPULSIVITY AND SENSATION SEEKING: A COMPARATIVE STUDY ON YOUNG ADULTS OF KOLKATA", submitted by TRISHNA BAR, 2nd year M.SC student in Rehabilitation Psychology, Sister Nivedita University, is as bonafied work, which may be placed before the board of examiner for their evaluation. This is in partial fulfilment for the Degree of M.SC in Rehabilitation psychology, Sister Nivedita University.

This is an original study done by the candidate and has not been submitted by her before any form for any other degree of this University or any other University.

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PLAGIARISM CERTIFICATE

"I, TRISHNA BAR, hereby declare that the research work titled, "Transitional dysregulation, Aggression, Victimization and Family Environment: A comparative study among young adults in Kolkata with and without experiences of Non-Suicidal Self-Injury", conducted by me, has been completed with full honesty and integrity. I confirm that the work is original and all sources of information have been appropriately acknowledged and cited. Furthermore, I attest that the research work has undergone thorough plagiarism checks to ensure its authenticity. I take full responsibility for the content and findings presented in this research."

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ABSTRACT

Introduction: Socioeconomic status (SES) is a multidimensional construct encompassing income, education, and occupation, which significantly influences individual behaviour and psychological outcomes. Impulsivity and sensation seeking, two behavioural tendencies closely related to risk-taking and decision-making, are often shaped by socioeconomic factors. This study investigates how SES impacts impulsivity and sensation seeking among young adults in Kolkata.

Aim: To explore differences in impulsivity and sensation seeking between young adults belonging to upper-class and upper-middle-class socioeconomic groups. The study aims to understand how SES influences various components of impulsivity and sensation seeking, providing insight into behavioural tendencies shaped by social and economic contexts.

Methods: A sample of 60 young adults, aged 18–25 years, was selected using simple random sampling from Kolkata. Participants were categorized into upper and upper-middle SES groups based on the Kuppuswamy Socioeconomic Scale. The Barratt Impulsiveness Scale (BIS-11) and Zuckerman's Sensation Seeking Scale (SSS) were used to measure six components of impulsivity (attention, motor impulsivity, self-control, cognitive complexity, perseverance, and cognitive instability) and four dimensions of sensation seeking (thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility).

Results: The results revealed that cognitive complexity, a dimension of impulsivity, differed significantly between socioeconomic groups, with higher SES individuals displaying greater cognitive complexity than their lower SES counterparts. This suggests that individuals from more advantaged backgrounds engage in more nuanced and reflective thinking. Additionally, while other dimensions of impulsivity and sensation seeking showed trends across SES, cognitive complexity emerged as the most statistically robust finding. These results highlight how environmental and educational disparities may contribute to differences in cognitive and behavioral regulation among young adults.

Conclusion: The study highlights the importance of considering socioeconomic context in understanding impulsivity and sensation seeking behaviours. These insights can inform targeted interventions and mental health strategies aimed at young adults in urban settings like Kolkata.

Key-words: Socioeconomic status, impulsivity, sensation seeking, young adults, Kolkata.

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- **CHAPTER I**

INTRODUCTION

Socioeconomic status (SES) encompasses not only income but also educational attainment, occupational prestige, and subjective perceptions of social status and social class. SES reflects quality-of-life attributes and opportunities afforded to people within society and is a consistent predictor of a vast array of psychological outcomes.

Socioeconomic status is a complex concept that involves education, income, and overall financial security, occupation, living conditions, resources, and opportunities afforded to people within society. Socioeconomic status and one's perceived social standing are factors of social class. Generalizing and pejorative language about socioeconomic status and class contributes to stereotypes. Furthermore, mentioning socioeconomic status when it is not relevant could introduce bias.

While there are no universal definitions of "high" and "low", the terms "high income" and "low income" are often used to describe where on a range an individual falls. But these terms may mask important distinctions when it comes to other aspects of poverty or wealth, and they may be misleading, as "wealthy people may qualify as low-income, or [the term 'low income'] may not capture the effects of wealth on class", the Style Guide from the N.Y.U. Review of Law & Social Change explains. **The American Psychological Association (APA)** uses the term "low-income and economic marginalization" in 2019 guidelines to establish common terminology that includes both limited financial resources and marginalization related to social class.

Some organizations, such as the **APA**, recommend avoiding the phrase "poor people", in part because of negative connotations associated with the word "poor". Others argue that alternatives to "poor" are sanitizing attempts to alleviate a communicator's discomfort rather than the discomfort of people the words are meant to describe.

1. Different Authors' Perspectives:

Hollingshead (1975): SES reflects an individual's or group's relative position within a social structure, recognizing the existence of unequal status structures in society.

McLoyd (1998): SES refers to the relative position an individual or group holds within a societal hierarchy, based on access to or power over valued goods like wealth or social recognition.

Dutton & Levine (1989): SES is a composite measure incorporating economic status (income), social status (education), and work status (occupation).

Krieger et al. (1997): Socioeconomic position is an aggregate concept including both resource-based and prestige-based measures, linked to both childhood and adult social class position.

Warner et al. (1949): Defined SES as a ranking system within a society based on income, education, and occupation.

Bourdieu (1986): Expanded SES to include cultural and social capital, which shape an individual's social mobility.

Adler et al. (1994): Linked SES to health disparities, emphasizing that lower SES is associated with poorer health outcomes.

2. Components of Socioeconomic Status

2.1 **Income**

Income refers to money earned through wages, salaries, business profits, or social benefits (Duncan et al., 2002).

High-income individuals enjoy better access to healthcare, education, and social opportunities (Krieger et al., 1997).

Low-income individuals often experience financial stress, food insecurity, and lower quality of life (Marmot, 2005).

Example & Study:

Wilkinson & Pickett (2009) in The Spirit Level found that income inequality strongly correlates with higher crime rates and lower well-being.

2.2 **Education**

Education is one of the most significant determinants of SES, as it influences employment opportunities, health literacy, and social status (Cutler & Lleras-Muney, 2006).

Higher education leads to better job prospects and stability (Becker, 1964).
Parents' education levels affect children's academic success (Coleman Report, 1966). Unequal access to quality education perpetuates class disparities (Bowles & Gintis, 1976).

Example & Study:

The Coleman Report (1966) found that school quality matters less than family background in determining academic achievement.

2.3 **Occupation**

Occupation refers to a person's job role, which determines income, social prestige, and work conditions (Goldthorpe, 1980).

Types of Occupations:

White-collar jobs: Require formal education and offer financial security (e.g., doctors, engineers).

Blue-collar jobs: Often involve manual labor with lower wages and job insecurity (e.g., factory workers).

Informal sector jobs: Lack social security benefits, leading to economic instability (e.g., street vendors).

Example & Study:

Erikson & Goldthorpe (1992) in The Constant Flux demonstrated that occupational mobility is constrained by class background.

2.4 **Wealth and Assets**

Wealth refers to accumulated financial resources such as property, investments, and savings (Keister, 2000).
Wealth provides intergenerational advantages (Piketty, 2014).
Racial and caste-based wealth gaps persist across generations (Oliver & Shapiro, 1995). Homeownership is a key indicator of wealth disparity (Sherraden, 1991).

Example & Study:

Piketty (2014) in Capital in the 21st Century argued that wealth accumulation is more unequal than income distribution.

2.5 **Living Conditions and Housing**

The quality of housing reflects SES, influencing health, safety, and access to resources (Gibson et al., 2011).
Slum dwellers face overcrowding, poor sanitation, and health risks (UN-Habitat, 2003). Gated communities offer safety, green spaces, and high living standards (Atkinson & Flint, 2004).

Example & Study:

Massey & Denton (1993) in American Apartheid demonstrated that residential segregation by SES leads to racial and class inequalities.

2.6 **Access to Healthcare**

Health disparities are closely linked to SES, as wealthier individuals can afford better medical care (Braveman et al., 2011).

Low SES groups suffer from higher mortality rates and chronic diseases (Marmot, 2005).

Healthcare affordability is a barrier for low-income populations (WHO, 2010).

Example & Study:

Wilkinson (1996) found that countries with higher income inequality have worse health outcomes.

2.7 **Social and Cultural Capital**

Pierre Bourdieu (1986) argued that SES is shaped by cultural and social capital in addition to economic resources.

Social capital: Networks and relationships that provide advantages (Putnam, 2000).

Cultural capital: Knowledge, education, and social norms that shape success (DiMaggio, 1982).

Example & Study:

Lareau (2003) in Unequal Childhoods found that middle-class parents teach negotiation skills, while working-class parents emphasize obedience.

Impact of Socio-economic Status on Individuals

Health Outcomes: Socio-economic status is strongly correlated with health outcomes. Higher SES individuals tend to have better access to healthcare, healthier lifestyles, and lower levels of stress, leading to better overall health (Adler & Rehkopf, 2008; Galobardes et al., 2006).

Education and Employment Opportunities:

Individuals from higher socio-economic backgrounds often have greater access to quality education and better employment opportunities, leading to higher earning potential and career advancement (Gottfredson, 2004; Sirin, 2005).

Housing and Living Conditions:

Socio-economic status influences housing options, with higher SES individuals having access to better-quality housing, safer neighborhoods, and improved living conditions (Adler & Rehkopf, 2008; Galobardes et al., 2006).

Social Capital and Networks:

Higher SES individuals tend to have access to broader social networks, which can provide additional opportunities for personal growth, career advancement, and social support (Gottfredson, 2004; Sirin, 2005).

Impact of Socio-economic Status on Society

Inequality and Social Mobility:

Socio-economic status plays a crucial role in perpetuating or reducing inequality within societies. Lower socio-economic status often leads to limited social mobility, as individuals face barriers to accessing opportunities for upward mobility (Corak, 2013; Piketty, 2014).

Crime and Social Unrest:

Areas with high concentrations of individuals from lower socio-economic backgrounds may experience higher crime rates and social unrest due to limited access to resources, higher levels of poverty, and decreased opportunities for socio-economic advancement (Sampson, Morenoff, & Gannon-Rowley, 2002; Wilson, 1987).

Education and Workforce Productivity:

Socio-economic disparities in educational opportunities and resources can lead to a less productive workforce and hinder economic growth and innovation (Hanushek & Woessmann, 2012; Murnane & Levy, 1996).

Public Health and Welfare:

The socio-economic status of a population impact public health outcomes and welfare expenditure. Lower SES groups may require greater public support in terms of healthcare, social assistance, and community development initiatives (Adler & Stewart, 2009; Marmot, Allen, Goldblatt, Boyce, & McNeish, 2010).

IMPULSIVITY

Impulsivity refers to a behavior pattern in which individuals demonstrate deficient control over their behavior. Multiple biological and environmental sources are believed to contribute to this temperament dimension. Extreme impulsivity that impairs one's level of functioning has been characterized as a hallmark of a number of childhood behavioral disorders. A variety of assessment techniques have been employed to measure impulsivity, including observer-rating scales, self-report, and neuropsychological tasks.
Impulsivity, broadly defined as a lack of ability to delay gratification,has been considered a factor in many mental disorders, including bulimia nervosa, borderline personality disorder, ADHD, pathological gambling, suicidal, aggressive behavior, and self-mutilating behavior (Menzies, 1997; Cyders and Smith, 2008).

Impulsivity can be defined as "a predisposition toward rapid, unplanned reactions to internal or external stimuli with diminished regard to [their] negative consequences" (**Fineberg et al., 2014).** It is important to note that impulsivity is not necessarily a negative trait. ***Eysenck*** (1993) distinguishes two components of impulsivity: the extraverted impulsivity (venturesomeness) and the psychotic impulsivity (impulsiveness). Extroverted impulsivity implies a decision-making process in which the consequences and risks are taken into

account, while psychotic (extreme) impulsivity does not consider the risks of a decision. Likewise, Dickson (cited in Coles, 1997) makes a conceptual difference with the term impulsivity. The concepts of functional and dysfunctional impulsivity both describe the state of acting without forethought; the difference is that in functional impulsivity the act is benecial or optimal, while in dysfunctional impulsivity the act is a source of trouble or harm to self or others.

Impulsivity is a transdiagnostic multidimensional construct characterizing the tendency to act on impulse or urges without regard for consequences for one's action. Impulsivity is implicated in several mental health disorders, with higher impulsivity levels being associated with poorer outcomes and more pronounced symptoms. Adolescence is a period of developmentally heightened impulsivity, and this can overlap with pathological behavioral manifestations. Such manifestations include substance use disorders, binge eating disorder, internet gaming disorder, obsessive-compulsive disorder, and attention deficit hyperactivity disorder (ADHD), all of which are associated with heightened
impulsivity (Moeller, Barratt, Dougherty, Schmitz, & Swann, 2001). These clinical conditions share a common characteristic of high-level impulsivity, indicating the transdiagnostic nature of impulsivity. In the case of the adolescent population, higher impulsivity has been associated with greater substance use (Smith & Cyders, 2016). Different impulsivity dimensions are linked together strongly and are associated with the development trajectory in adolescence, with increasing impulsivity at the onset before the impulsivity starts to level off (Littlefield et al., 2016). Besides substance use, higher impulsivity levels have been associated with multiple disorders such as ADHD and bipolar disorder. in the adolescent population also(Nandagopal et al., 2011). Thus, heightened impulsivity is a transdiagnostic phenomenon across the general and adolescent populations. Understanding impulsivity as a transdiagnostic construct is crucial for the proper management of any disorder associated with heightened impulsivity.
The first step to managing high impulsivity would be the proper measurement or quantification, followed by an appreciation of how being impulsive modulates subsequent clinical presentations. It is well appreciated that impulsivity is a multidimensional construct, and different approaches to represent the multiple dimensions of impulsivity have been proposed. For example, one approach considers stratifying various behavioral aspects of impulsive actions in the form of motor impulsivity, attentional impulsivity, and nonplanning impulsivity (Patton, Stanford, & Barratt, 1995). Another approach could be to consider

stratifying impulsivity depending on the individual's state, e.g., impulsivity during a positive or negative emotional state (stress) of the individual. Assessing different dimensions of impulsivity is helpful as various impulsivity dimensions could be associated differently with the underlying health disorders. For example, motor and attentional impulsivity might be more relevant to the study of ADHD as it concerns the adolescent population (Rickson, 2006) (Gökçe, Yusufoğlu, Akın, & Ayaz, 2017). Similarly, heightened impulsivity during positive or negative emotional states has been commonly linked with substance use (Smith & Cyders, 2016). In this article, we provide a narrative review of the clinical relevance of impulsivity, approaches for its quantification, and management of impulsivity in patients with different health disorders.

Impulsivity as a multidimensional transdiagnostic construct

Impulsivity is a multidimensional construct that encompasses state, trait, choice, and specific motor and cognitive aspects of the tendency for impulsive behaviors (Rickson, 2006), (Herman et al., 2018). Trait impulsivity reflects an individual's general tendency to engage in impulsive behaviors, which is relatively stable across different situations. Traits like sensation-seeking, lack of planning, and lack of perseverance are often associated with trait impulsivity (Patton et al., 1995). State impulsivity refers to temporary impulsive tendencies as a response to specific contexts and emotional states. It can be influenced by external stressors or emotional stimuli and can manifest as rash actions and impulsive emotional responses (De Wit, 2009). Choice impulsivity relates to impulsive decision-making, particularly when individuals choose immediate rewards over delayed but larger rewards (Hamilton et al., 2015). Motor impulsivity involves difficulties in response inhibition and self-control, leading to hasty and poorly controlled actions (Chowdhury et al., 2017). Other facets, such as attentional impulsivity, emotional impulsivity, and cognitive impulsivity, also construct the multifaceted concept of impulsivity (Herman et al., 2018). Studying these dimensions is essential for understanding the complex role of impulsivity in human behavior, decision-making processes, personality traits, and psychopathological conditions.

Multidimensional impulsivity presents as a shared feature across various mental health disorders such as borderline personality disorder (BPD), bipolar disorder, ADHD, and substance use disorders (SUD).

• **Borderline personality disorder (BPD):** Borderline personality disorder (BPD) is characterized by emotional dysregulation, high impulsivity reflected in unstable relationships (Dougherty et al., 2002; White et al., 2003), self-destructive behaviors (self-harm, suicidality, substance abuse), impulsively quitting jobs or relationships, and impulsive aggression (Links et al., 1999). Impulsive behaviors become particularly evident in patients under perceived extreme emotional states (Sebastian et al., 2013); to better understand this concept, understanding the association between emotion regulation and negative emotional states is necessary. Previous studies have reported that higher levels of impulsive aggression predict a heightened risk of suicidality in adolescents with BPD (Soloff et al., 2000). Neuroimaging studies highlight that functional abnormalities in limbic brain areas associated with emotional regulation and frontal lobe associated with executive control relate to high impulsivity in BPD (Damasio et al., 1990; van Zutphen et al., 2015).

• **Bipolar disorders:** Patients with bipolar disorder can exhibit high impulsivity, particularly during manic episodes (Swann, Janicak, et al., 2001). Impulsivity in bipolar disorder is a complex construct with both state-dependent and trait- dependent aspects (Moeller et al., 2001). State-dependent impulsivity is particularly significant in patients with active manic symptoms and can manifest as multiple impulsive behaviors such as overspending, recklessness, sexual indiscretions, substance use, and suicidal actions; aggression may also be noted (Corruble et al., 1999; Patton et al., 1995) . On the other hand, trait-dependent impulsivity in bipolar disorder is not limited to specific episodes but persists across various phases (Najt et al., 2007; Swann, Anderson, et al., 2001). Previous studies have reported bipolar disorder patients presenting a consistently higher level of impulsivity compared to those without the disorder (Swann, Anderson, et al., 2001). Bipolar patients tend to score higher impulsivity measures during both manic and euthymic states compared to healthy individuals, displaying higher levels of impulsivity in their attention, motor skills, sensation seeking, and risk-taking tendencies (Moeller et al., 2001; Najt et al., 2007; Swann et al., 2003). Deficits in the decision-making process due to impaired prefrontal cortex function and decreased serotonin are considered one of the factors contributing to impulsivity in bipolar disorder (Jentsch & Taylor, 1999; Linnoila et al., 1983).

• **Attention-deficit/hyperactivity disorder (ADHD):** Attention-deficit/hyperactivity disorder (ADHD) is marked by persistent patterns of inattention, hyperactivity, and

high impulsivity. Impulsivity, particularly in decision-making, is a characteristic feature of ADHD (Moeller et al., 2001). Impulsivity in ADHD is often evident as difficulty maintaining attention, being distracted, interrupting others, or engaging in risky behaviors without considering consequences (Ende et al., 2016; Winstanley et al., 2006). ADHD patients exhibit elevated impulsive decision-making, poor inhibitory control, and aversion to delays with a preference for more immediate yet small rewards over larger, delayed rewards (Patros et al., 2016; Winstanley et al., 2006). If impulsivity is not managed, the repercussions could be long-lasting. For example, impulsivity symptoms in childhood ADHD have been linked to long-term adverse consequences such as adult criminal behavior, intensified as individuals reach adolescence when hormonal changes compound pre-existing impulsivity (Babinski et al., 1999). Neuroimaging studies highlight altered prefrontal cortex functioning and dopaminergic pathways as potential underlying factors of heightened impulsivity in ADHD (Moeller et al., 2001; Winstanley et al., 2006).

• **Substance use disorder (SUD):** Impulsivity is a common feature of SUD (e.g., alcohol, cocaine, opiates, and methamphetamine use). Individuals with SUD often display poor tolerance to stress and deficient inhibitory control, leading to rash, unplanned substance-seeking behaviors without considering the negative consequences(Dawe & Loxton, 2004), (Volkow & Blanco, 2023) . The association between impulsivity and substance use has been demonstrated in various studies. Substance-dependent individuals exhibited higher levels of impulsivity compared to healthy individuals (Dawe & Loxton, 2004; Leland & Paulus, 2005; Loree et al., 2015; Verdejo-Garcia et al., 2008). Individuals with histories of impulsively violent behaviors tend to have higher rates of substance abuse (Moeller et al., 2001). Individuals with SUD are more likely to prefer immediate rewards over larger but delayed rewards (Dawe & Loxton, 2004; Leland & Paulus, 2005; Verdejo-Garcia et al., 2008), explaining their proclivity for impulsivity actions. Impulsivity in SUD has also been associated with the severity of the disorder (Karlsson et al., 2021; Kräplin et al., 2020). Active substance use is associated with higher levels of impulsivity, so sobriety and use cessation are essential to be able to assess an individual's baseline impulsivity. Furthermore, impulsivity tendencies are implicated across different stages in the spectrum of substance use behaviors, from non-use to problematic use. Highly impulsive individuals may be more likely to experiment with substances or engage in occasional drug use without considering the potential for addiction. Impulsivity can further

contribute to the development of addiction by making it difficult for individuals to resist strong cravings and severe withdrawal symptoms (Loree et al., 2015). Understanding the characteristics of impulsivity in SUD is important in prevention and treatment aimed at reducing substance use and related harms.

Factors affecting impulsivity

Impulsivity as a multifaceted trait is influenced by various interconnected biological, psychological, and environmental factors, shaping its expression and impact on individuals (Bezdjian et al., 2011; Moeller et al., 2001). Neurobiological factors such as neurotransmitters, brain connectivity, and gene expression play pivotal roles in individuals' cognitive and motor control processes (Coccaro, 1989; J. Liu et al., 2018; Pokorski, 2014), thereby influencing impulsivity. For psychological factors, cognitive processes and emotional regulation significantly contribute to the manifestation of impulsivity (Fox et al., 2007; Schreiber et al., 2012; Weiss et al., 2012). Furthermore, environmental factors, including early life experiences, social influences, and exposure to stressors, also wield substantial influence over impulsive tendencies (Gondré-Lewis et al., 2016; Lovallo, 2013; McMullin et al., 2021; Sanchez & Bangasser, 2022). Adolescence is a critical period characterized by rapid physical and brain maturation, emotional and cognitive developments, making individuals vulnerable to the formation of impulsive tendencies. Understanding these underlying factors that contribute to impulsivity is important for gaining insight into the construct of impulsivity and assessing treatment options for adolescents.

Biological factors

Genetic influence

Previous studies have suggested that impulsivity is heritable(Verdejo-Garcia et al., 2008). Variations in genes related to neurotransmitter functioning and neural development may lead to individual differences in impulsivity levels. The deficit in response inhibition and impulse control has been associated with several genes in the serotonergic system and the dopaminergic system (Mann et al., 2001; Seo et al., 2008). Tryptophan hydroxylase 1 (TPH1) in the serotonergic system, for example, is associated with a reduced level of 5-

hydroxyindoleacetic acid (5-HIAA) in cerebrospinal fluid (CSF), which is a major indicator of serotonin metabolism that contributes to individual differences in impulsive and aggressive behaviors (Nielsen et al., 1994; Rujescu et al., 2002; Seo et al., 2008). Dopamine receptors D3 and D4 (DRD3 and DRD4) have also been found to be related to impulsivity (Kreek et al., 2004). Other genes that are associated with brain development, for instance, Notch4, cell adhesion molecules (CAMs), and Ryanodine receptor genes (RYR2 and RYR3) are also potentially linked to impulsive behaviors among young adults (Khadka et al., 2014).

Neurotransmitters and neural circuits

Most of the genes discussed above code proteins that control major neurotransmitter systems, particularly serotonin and dopamine systems which play important roles in regulating impulsivity (Seo et al., 2008). Both serotonin and dopamine systems interact and modulate each other's activities, and altered levels or imbalances in these neurotransmitter systems have been implicated in various mental health disorders, such as depression, anxiety, and impulsivity-associated disorders (Coccaro, 1989; Lidberg et al., 1985; Moore et al., 2002). The serotonin system plays a vital role in regulating inhibitory transmission in the prefrontal cortex (PFC) (Yan, 2002). A notable increase in dopamine and serotonin inputs to the prefrontal cortex was found during adolescence, reaching peak levels. This makes adolescence a critical period for brain development. The dysfunctional interactions between serotonin and dopamine systems in the prefrontal cortex may contribute to impulsive aggression behavior (Seo et al., 2008). Low serotonergic functioning, indicated by lower CSF 5-HIAA level has been associated with increased impulsivity and self-destructive behaviors (Mann et al., 2001). A low level of 5-HIAA concentration in CSF is suggested to be a potential biomarker of impulsivity in a study of impulsive violent offenders (Linnoila et al., 1983) and impulsive alcoholic offenders (Virkkunen et al., 1994).

Functional imaging techniques reveal evidence that impulsivity is also linked to various brain networks and activities. As a crucial neurodevelopmental stage, adolescence plays a vital role in brain development, particularly in shaping cognitive skills and inhibition control. These factors greatly influence the formation of impulsivity, risky behavior, and addiction.

The prefrontal cortex (PFC) is vital in response inhibition and is thus commonly implicated in impulsivity. In a study of children with ADHD, the activation level in PFC was found to be correlated with response inhibition (Rubia et al., 2007). Similarly, the right posterior ventrolateral prefrontal cortex, as well as the dorsolateral prefrontal cortex (dlPFC),

exhibited great activation in tasks designed to excite inhibitory function (Brown et al., 2015). Other studies have implicated the anterior cingulate cortex (ACC) in impulsivity, which involves error detection and conflict monitoring, processes that are important for response inhibition (Matsuo et al., 2009). Impulsive individuals exhibit reduced ACC activation during response inhibition tasks (Golchert et al., 2017). Impairments in cognitive control systems involving brain regions like the middle frontal gyrus and ACC contribute to impulsivity manifestations in various conditions such as attention-deficit/hyperactivity disorder (ADHD) and substance use (Bush et al., 1999; Seidman et al., 2006). Studies suggest that brain structure continues to develop during adolescence, making this period critical for the development of cognitive skills, executive functions, inhibition control, and decision-making processes. For example, deficits in PFC and ACC have been associated with decreased impulse control among adolescents, thus increasing the risk of addiction behaviors such as internet gaming addiction and problematic substance use (Bari & Robbins, 2013). Pre-motor areas also contribute critically to response inhibition and impulsivity. Patients with lesions in brain regions like the supplementary motor area (SMA), the pre-motor area, and the motor subdivision of the anterior cingulate cortex (ACC) showed more impulsive behaviors in laboratory behavioral tests (Bari & Robbins, 2013)[61]. Bilateral dorso-rostral pre-motor regions (PMdr) also correlated with impulsivity and exhibited a negative correlation with dorsal attention and executive-control networks in a study involving high-impulsive juveniles (Shannon et al., 2011).

Psychological factors

Emotion regulation

Emotional regulation refers to the ability to manage and modulate emotional responses (Aldao et al., 2010). It plays a critical role in maintaining the long-term goal of self-regulation when experiencing emotional distress, as opposed to seeking immediate distraction such as substance use or acting impulsively (Tice et al., 2001). In emotion dysregulation, one cannot effectively manage and control emotions. Studies have highlighted a strong link between emotion dysregulation and impulsivity across various populations (Gratz & Tull, 2010; Messman-Moore et al., 2010; Schreiber et al., 2012) and a combined effect of emotion dysregulation and high impulsivity leading to symptoms of PTSD, BPD, and addictive behaviors (Jakubczyk et al., 2018; Pivarunas & Conner, 2015; Tragesser et al., 2007; Weiss et al., 2012). Difficulties in emotion regulation are often associated with higher levels of

impulsivity. Individuals who struggle to regulate their emotions are more likely to engage in impulsive behaviors as a way to cope with intense emotional stimuli, which often lead to impulsive decision-making, addictive behaviors, or self-harm behaviors (Gratz & Tull, 2010; Schreiber et al., 2012). In particular, in the adolescent period, individuals are more prone to impulsive behavior due to less effective emotion regulation strategies for negative events(Gratz & Tull, 2010). Substance use in adolescents is an example of that interaction, as adolescence is associated with heightened emotions, easy access to substances, and experimentation is encouraged by peers.

Impulsivity is also regulated by positive and negative emotional states. Negative Urgency (NU) and Positive Urgency (PU) refer to impulsiveness during states of negative emotions and positive emotions, respectively (Lynam et al., 2006). Negative emotions, such as anger, fear, and sadness, have been found to increase impulsive tendencies (Berg et al., 2015). NU is associated with food addiction, depression, self-report measures of aggression, suicidal ideation, and self-harm actions (Berg et al., 2015; d'Acremont & der Linden, 2007; Johnson & Carver, 2016; Pivarunas & Conner, 2015), which are considered as the attempt to regulate negative affect (Tragesser et al., 2007). Heightened negative affect when experiencing failure to obtain a reward or obstacles to achieving a goal, for example, leads to the urge to act impulsively (Eben et al., 2020; Leith & Baumeister, 1996). Impulsive actions arise when individuals expect immediate reward or relief. In gambling, individuals who seek reward or relief from gambling exhibit significantly higher impulsivity scores compared to those without expectations of reward or relief (Will Shead & Hodgins, 2009).

Previous studies have found a positive correlation between negative urgency and positive urgency, that is, people who react impulsively to negative emotions tend to have impulsive responses toward positive emotions (Smith et al., 2007). Positive urgency has been associated with impulsive behaviors such as drinking and gambling, drug use, and risky sexual behavior (Cyders et al., 2007, 2010; Zapolski et al., 2009). High PU is also correlated with suicidality and self-harm which are intuitively considered the consequences of negative emotions (Berg et al., 2015). Poor self-regulation when experiencing intensive emotions(Johnson et al., 2020) could lead to the association between PU and suicidality or self-harm.

Cognitive processes

Executive functions encompass a set of cognitive processes responsible for planning, inhibiting responses, and maintaining goal-directed behavior. When facing external stimuli, executive functions can counteract impulsivity by redirecting attention away from distractions, thereby modulating behavioral responses (Crews & Boettiger, 2009). Executive function impairment, such as poor response inhibition and working memory deficits, is linked to higher impulsivity levels (Chamberlain & Sahakian, 2007; Finn et al., 1999; Weidacker et al., 2017). Individuals with weaker executive functions may struggle to control their impulses in various situations. Such impulse control deficits are associated with various neuropsychiatric conditions including alcohol and substance use disorders, ADHD, and personality disorders (Crews & Boettiger, 2009). Adolescence is often associated with immature brain development, particularly in the prefrontal cortex, which is critical for executive functions and inhibition control and thus contributes to the high risk of addiction among adolescents (Crews & Boettiger, 2009).

Sensation seeking, a personality dimension, characterized by the tendency to seek novel, intense, and thrilling experiences without considering the consequences, is intricately connected to impulsivity, giving rise to risk-taking behaviors (Zuckerman, 1994). Individuals with high sensation seeking may show a lack of behavioral control and are prone to engaging in fast, impulsive actions to satisfy their desire for excitement and novelty (Hur & Bouchard, 1997). While sensation seeking could sometimes lead to daring exploration and creativity, it could also result in recklessness and poor decision-making. Heightened sensation seeking traits leading to impulsive behaviors are evident in various scenarios such as alcohol and drug dependencies, risky sexual behaviors, and psychopathic personalities (Donohew et al., 2000; Zuckerman, 1994).

The inability to assess the potential outcomes of immediate and future events easily leads to impulsive actions. Behavioral measures like delay discounting have been employed to gauge impulsive decision-making. Delay discounting is a cognitive process that involves valuing immediate rewards more highly than delayed rewards, resulting in the challenge to defer gratification. High levels of impulsivity are associated with greater delay discounting, indicating a preference for immediate gratification (Arce & Santisteban, 2006; Mobini et al., 2007). This preference can lead to impulsive decision-making such as alcohol and drug use,

and gambling behaviors, as individuals choose short-term rewards over potentially greater long-term benefits (Bechara et al., 1994; Crews & Boettiger, 2009). Thus, adolescents/young adults with high sensation-seeking characteristics and immature executive function are predisposed to disorders including SUD.

Environmental factors

Childhood maltreatment

Exposure to adverse experiences during childhood, such as trauma or neglect, has been linked to increased impulsivity later in life, which has been found to be a mediator for psychiatric conditions such as excessive aggression, depression, self-harm behavior, and suicidal behavior (Arens et al., 2012; Corstorphine et al., 2007; Evren et al., 2013; Fanning et al., 2014). A critical part of childhood development is the development of emotional regulation skills. Individuals exposed to childhood maltreatment such as early neglect, and physical/psychological abuse are more likely to have emotional dysregulation, fostering depression, anxiety, impulsivity, and suicidality (Arens et al., 2012; Paul & Ortin, 2019). Frequent exposure to adverse experiences prevents the child from learning how to deal with disruptive emotions and cultivating a healthy stress and emotion response system, which further impairs the development of emotion regulation skills and results in high impulsivity (Arens et al., 2012; Rytilä-Manninen et al., 2018). Adolescents who have experienced childhood maltreatment may develop maladaptive coping strategies, such as impulsivity, as
a way to manage distressing emotions or situations. Childhood maltreatment also affects the child's problem-solving skills, leading to the lack of premeditation or lack of perseverance, the facets of impulsivity (Arens et al., 2012).

Multiple transmitters, particularly the serotonergic and dopaminergic systems, link childhood maltreatment and impulsivity. Childhood trauma can cause altered serotonergic functioning, which has been associated with increased impulsivity and self-destructive behaviors (Brodsky, 2016; Gibb et al., 2006; Roy et al., 2007). Chronic trauma or stress leads to reduced availability of serotonin in the brain, affecting the ability to modulate emotional response, which is one factor leading to impulsivity (Braquehais et al., 2010). Exposure to early adversity also causes an alteration of central dopaminergic activity in the nervous system, leading to impulsivity and risky behaviors (Jiménez-Treviño et al., 2019; Lovallo, 2013).

Childhood maltreatment has also been associated with impaired neural development.

Aberration in the ACC (anterior cingulate cortex) brain region has been suggested to be one of the consequences of childhood maltreatment (Teicher & Samson, 2016). Childhood abuse can result in impaired myelination in the anterior cingulate cortex, which affects individuals' ability to regulate cognitive and motor responses (Lutz et al., 2017). Abnormal development in the prefrontal cortex, orbitofrontal cortex, and amygdala are also shown to be consequences of childhood trauma, while these regions play a vital role in response inhibition and the decision-making process, leading to impulsivity (Braquehais et al., 2010; Hart & Rubia, 2012; R. T. Liu, 2019), which can manifest with a range of behaviors including substance use.

Impulsivity is also likely heritable from parents to children through parenting and behavioral pathways. Parents with higher levels of impulsivity are more prone to inappropriate parenting styles. Impulsive parents have more difficulties managing the stress of raising children, leading to subsequent emotional and physical treatment of the children, resulting in children engaging in this misbehavior (R. T. Liu, 2019).

Problematic substance use

Substance use, including drugs and alcohol, has been found to have a complex and bidirectional relationship with impulsivity among adolescents (Thompson et al., 2006). Impulsivity may cause initiation of substance use, as impulsive individuals might be more prone to seeking out stimuli or risky experiences, including substance experimentation. Adolescents are particularly vulnerable to the initiation of substance use due to low inhibition control (Kozak et al., 2019). In addition, individuals may use substances as a way to cope with stress and negative emotions, and this coping mechanism can further foster impulsive tendencies (Gratz & Tull, 2010; Kozak et al., 2019). On the other hand, problematic substance use can cause increased impulsive tendencies and impair decision-making. Acute substance intake can lead to a temporary increase in impulsive behaviors. Long-term use, also known as addiction, is associated with increased impulsivity (Dawe et al., 2004; Mitchell & Potenza, 2014; Rømer Thomsen et al., 2018; Shin et al., 2013). Adolescents with substance dependencies such as alcohol, cocaine, and stimulant polysubstance exhibit elevated scores on impulsivity measures (Crunelle et al., 2014; Leland & Paulus, 2005; Nagoshi et al., 1991), and tend to perform poorly on cognitive tasks assessing inhibitory control (Li et al., 2006; Verdejo- Garcia et al., 2008), which contributes to the dependence of addictive behaviors and discourage recovery from addiction.

The damage to the brain function is considered to be the underlying basis of how substance use affects impulsivity. Impairments in response inhibition have been observed in adolescents with early-onset alcoholism (Loree et al., 2015). A significant decrease in dopamine D2 receptor availability in cocaine abusers has been associated with decreased metabolism in several regions of the frontal lobes, orbitofrontal cortex, and cingulate gyri, leading to the loss of control and drug-taking behavior (Volkow et al., 1993). Similarly, low metabolism in the lateral orbitofrontal gyrus in cocaine abusers has also been found to be a cause of poor inhibitory control (Goldstein et al., 2005). Chronic drug use has been linked to structural and functional changes in the frontal cortex, contributing to impaired inhibitory control and increased impulsivity (Kreek et al., 2005). In the case of high-risk alcohol- addictive individuals, decreased right/left volume in the orbitofrontal cortex (OFC) has been found to cause impaired emotional regulation processes and high impulsivity (Hill et al., 2009).

Socio-cultural factors

Cultural and societal factors have an immense influence over individuals, likely shaping their inclinations toward impulsivity. Socialization studies suggest that an individual's behavior can be shaped by observations from peers (Wills & Cleary, 1996). Adolescents tend to take more risks when observed by peers, which leads to a higher likelihood of impulsive decision- making. Individuals might be more influenced by impulsive peers, with behaviors ranging from eating habits to substance use, as they offer an avenue for deviating from societal norms (Gilman et al., 2014). Moreover, individuals raised in adverse environments including deficit parenting skills, poor parent-child relationships, and excessive stress are more prone to impulsive conduct problems such as aggression and violence(Hinshaw, 2003; Sanchez & Bangasser, 2022). Cultural variables, including exposure to violence in media and accessibility to weapons, also account for the emergence of impulsive behaviors (Hinshaw, 2003). Impulsivity is also altered by the cultural backgrounds in which people are raised. For instance, in societies that prioritize personal preference and goals, people are encouraged to choose freely based on their needs. On the other hand, cultures that emphasize family obligations, long-term planning, and self-control can mitigate impulsive tendencies, ranging from purchasing behaviors to risk-taking behaviors (Kacen & Lee, 2002; Telzer et al., 2013). These observations suggest that impulsivity isn't solely an individual trait but a combined result of personal characteristics and the environment they inhabit.

Examples of Impulsivity

Impulsivity may be experessed in a variety of ways depending on the underlying cause. Every individual and situation is different. Some common examples of impulsivity include:

- Abruptly changing or canceling plans
- An inability to remain still
- Binge eating or drinking
- Clearing out belongings to "start anew"
- Constantly "turning over a new leaf"
- Destroying property
- Escalating confrontations
- Frequent emotional outbursts
- Inability to receive criticism without affront
- Joining and quitting a lot of groups
- Jumping to conclusions
- Meaningless or risky sex
- Over-apologizing
- Oversharing of emotions
- Overspending
- Physical violence
- Quitting a job suddenly
- Self-harm
- Self-mutilation
- Threatening to harm one's self or others

Cognitive and Behavioral Traits:

- **Acting on the spur of the moment:** Difficulty delaying gratification or thinking before acting.
- **Lack of planning:** Making decisions without considering consequences or potential risks.
- **Difficulty focusing and staying on task:** Easily distracted and struggling to complete tasks.
- **Restlessness and inability to relax:** Feeling constantly on the go and having difficulty switching off.
- **Interrupting others:** Talking excessively and not allowing others to finish their thoughts.

- **Emotional outbursts:** Struggling to control emotions, leading to frequent anger, crying, or other emotional reactions.
- **Oversharing:** Sharing personal information inappropriately or without considering the potential consequences.
- **Constantly starting over:** Abruptly quitting jobs, relationships, or activities without considering the long-term implications.
- **Difficulty maintaining relationships:** Struggling to form and maintain healthy relationships due to impulsivity and emotional instability.
- **Aggressive behavior:** Lashing out physically or verbally in response to frustration or perceived threats.
- **Self-harm:** Engaging in self-injurious behaviors, such as cutting or burning, as a way to cope with emotional distress.
- **Unsafe sex:** Engaging in risky sexual behaviors without considering the consequences, such as unprotected sex.
- **Substance abuse:** Using drugs or alcohol to cope with emotions or to feel better.
- **Compulsive behaviors:** Engaging in repetitive behaviors, such as shopping or gambling, to relieve anxiety or boredom.
- **Destroying property:** Damaging property during an impulsive outburst.
- **Breaking rules or laws:** Engaging in illegal or rule-breaking behaviors without considering the consequences.
- **Difficulty managing finances:** Overspending, making poor financial decisions, or struggling to save money

SENSATION SEEKING

Sensation-seeking, as defined by **Marvin Zuckerman**, is a personality trait characterized by the need for varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experiences. The sensation seeking construct is defined as: ‘A trait defined by the seeking of varied, novel, complex, andintense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for thesake of such experience’ (Zuckerman, 1994,)

Zuckerman (1979) theorized that individuals high in sensation seeking may be chronically underaroused and require additional stimulation to reach their optimal level of arousal. As such, underaroused individuals may engage in sensation seeking behaviors as a means of increasing their arousal to their preferred level.

As part of Zuckerman's seminal research on the conceptualization and assessment of sensation seeking (using the Sensation Seeking Scale [SSS]; Zuckerman, Kolin, Price, & Zoob, 1964), he identified four subfactors of sen- sation seeking. As defined by Zuckerman (2008), thrill and adventure seeking involves "the intent or desire to engage in physical activities or sports involv- ing unusual sensations," whereas experience seeking involves "the intent or desire to have new sensations and experiences through the mind and senses as in music, travel, and an unconventional lifestyle." Disinhibition is con- ceptualized as "seeking excitement through other people in parties, sex, and alcohol," and boredom susceptibility involves "an aversion to sameness and routine in activities and people, and a restlessness when little variety is pres- ent" (Zuckerman, 2008)

sensation seekers are individuals characterized by a strong need for varied, novel, and intense experiences, along with a willingness to take risks to achieve them, and are often categorized by four dimensions: thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility.

Here's a more detailed breakdown of the characteristics of sensation seekers:

Core Traits:

- **Need for Novelty and Intensity:**
  Sensation seekers crave new and exciting experiences, often seeking out activities that provide a high level of stimulation and excitement.
- **Willingness to Take Risks:**
  They are comfortable with taking physical, social, legal, and financial risks to pursue these experiences.
- **Low Tolerance for Boredom:**
  Sensation seekers are easily bored and restless in situations that lack stimulation or novelty.
- **Sensitivity to Internal Sensations:**

They are often attuned to their internal states and seek external stimuli that maximize their internal sensations.

Four Dimensions of Sensation Seeking (as identified by Marvin Zuckerman):

- **Thrill and Adventure Seeking:**
  This dimension refers to the desire for physical activities that involve excitement and risk, such as extreme sports or adventurous travel.
- **Experience Seeking:**
  This dimension encompasses a desire for novel and unconventional experiences, including unconventional choices, social nonconformity, and a willingness to try new things.
- **Disinhibition:**
  This dimension reflects a preference for "out of control" activities, such as wild parties, drinking, and potentially illegal activities.
- **Boredom Susceptibility:**
  This dimension characterizes a low tolerance for routine or monotony, leading to restlessness and a need for stimulation.

Examples of Sensation Seeking Behaviors:

- Engaging in extreme sports like skydiving, rock climbing, or surfing.
- Trying new and unusual foods or drinks.
- Traveling to unfamiliar places and cultures.
- Experimenting with drugs or alcohol.
- Participating in social activities that are unconventional or risky.
- Seeking out new and challenging relationships.

Sensation seeking is a broad concept that often correlates with certain risk-taking behaviors and preferences for novelty, excitement, and adventure. Let's dive deeper into different aspects of sensation-seeking among the youth in Kolkata:

1. Psychological and Demographic Factors

a) Age and Gender Influence:

Sensation seeking tends to peak during adolescence and early adulthood. Research across different populations suggests that males typically score higher on sensation-seeking scales than females. This trend may hold true in Kolkata as well. The specific age group of young adults (e.g., 18-25 years old) is particularly prone to experimentation with new experiences,

which may include thrill-seeking activities, reckless behaviors, and engagement in riskier social situations.

b) Educational and Socioeconomic Status:

Young adults in Kolkata come from diverse educational backgrounds, with a growing proportion attending universities and technical institutes. Studies suggest that college students often exhibit higher levels of sensation seeking due to their exposure to new social circles, greater autonomy, and peer influence. Additionally, socioeconomic status can influence the type of experiences young adults seek. Those from higher socioeconomic backgrounds may have more access to luxury adventure sports (e.g., skydiving, bungee jumping), while others may engage in street-level thrills (e.g., street racing, risky behavior in nightlife).

2. Cultural Context in Kolkata

a) Traditional vs. Modern Influence:

Kolkata, as a cultural hub in India, has a rich heritage steeped in literature, art, and philosophy, yet it is also rapidly modernizing. The contrast between tradition and modernity creates a unique context for sensation-seeking behavior. On one hand, conservative cultural norms may influence some young adults to engage in socially acceptable forms of excitement like intellectual pursuits or cultural festivals. On the other hand, the allure of more extreme and "modern" sensations, such as extreme sports or nightlife experiences, may push others to explore activities that break traditional boundaries.

b) Urban vs. Rural Influence:

The urban environment of Kolkata plays a significant role in shaping sensation-seeking behaviors. The city offers numerous opportunities for thrill-seeking activities such as parties, concerts, adventure parks, and cultural events, which may not be available in rural areas. Urban youth tend to be more exposed to Westernized ideas of leisure, including adventurous travel, nightlife, and social experimentation, which often align with sensation-seeking traits.

3. Common Behaviors Linked to Sensation Seeking in Kolkata

a) Adventure and Sports Activities:

As previously mentioned, Kolkata's proximity to various adventure destinations is an important factor. Some common activities include:

- Adventure Sports: These may include paragliding in nearby regions such as Kalimpong, trekking in the hills, kayaking in eco parks, and rock climbing.
- Motorbiking and Road Trips: Young adults often engage in long road trips to neighboring destinations, which can be seen as a form of sensation seeking. The thrill of exploring new places, navigating unfamiliar terrains, and embracing riskier travel is common among this demographic.
- Nightlife and Parties: Kolkata has a growing party scene, with many clubs, bars, and music events that cater to young, thrill-seeking individuals. These venues are spaces for experimentation with alcohol and drugs, both of which can increase sensation-seeking behavior, especially in an urban setting.

b) Risk-Taking Behaviors:

- Alcohol and Substance Abuse: One significant example of sensation-seeking behavior in Kolkata is the rising consumption of alcohol among young people. According to a report from the Times of India, there has been a notable increase in the number of young alcoholics in the city. Many young adults, especially those in college, engage in drinking as part of social gatherings or to fit in with peers. Some might also use alcohol to cope with stress or as an attempt to enhance social experiences.

- Driving/Racing: Speeding and reckless driving have also become more prevalent, especially among male youths. The adrenaline rush from driving at high speeds, participating in street racing, or engaging in other daredevil activities is a direct form of sensation seeking.

c) Digital Sensation Seeking:

The advent of social media and online gaming has also become an outlet for sensation-seeking behavior among young adults in Kolkata. Social media platforms are often used to show off daring activities or adventurous travel, feeding into the desire for novel experiences that provide social validation.

4. Psychological Drivers of Sensation Seeking in Kolkata

a) Influence of Peer Groups and Social Media:

Peer influence plays a massive role in shaping sensation-seeking behavior. Social media platforms like Instagram, Facebook, and YouTube contribute to the growing desire for more extreme or unique experiences. Young adults often participate in trending activities, such as vlogging, extreme sports, or exotic travels, to showcase their experiences. This creates a feedback loop where seeking novelty becomes intertwined with social validation.

b) Coping Mechanism:

For many young adults, especially in a fast-paced city like Kolkata, sensation-seeking activities may serve as a means of coping with stress or boredom. College life, career pressures, and family expectations can create anxiety, which leads some individuals to seek out excitement or risky behaviors to distract or relieve tension.

5. Risk Management and Intervention

a) Awareness Campaigns:

Given the potential dangers associated with sensation-seeking behaviors such as substance abuse, reckless driving, and unsafe adventure activities, public health campaigns aimed at educating youth on responsible behavior are crucial. For instance, organizations might focus on promoting safety while engaging in extreme sports or raising awareness about the harmful effects of substance abuse.

b) Mental Health Support:

Mental health resources and counseling services can help young adults cope with the underlying psychological factors that drive sensation-seeking behavior. Awareness about mental well-being and de-stigmatizing help-seeking behavior would be important in addressing unhealthy patterns of sensation seeking.

The range of sensation-seeking behavior among young adults in Kolkata is influenced by various psychological, cultural, and social factors. The city's blend of tradition and modernity, its growing exposure to global trends, and the high level of peer influence play a pivotal role in shaping these behaviors. While many youths engage in healthy forms of sensation seeking,

such as participating in adventure sports or exploring new social scenes, others may engage in riskier activities that carry greater health and social consequences.

2. The Connection Between Impulsivity and Sensation Seeking

Although they are distinct constructs, impulsivity and sensation seeking are related, often co-occurring in individuals, especially among young adults. They share several overlapping traits and frequently contribute to similar types of behaviors. Let's examine their relationship:

Features:

Risk-Taking: Both impulsivity and sensation seeking are linked to risk-taking behavior. Sensation seekers actively pursue high-risk, high-reward activities for excitement, while impulsive individuals often engage in risky behaviors because they act without considering potential consequences. This can lead to similar outcomes, such as participating in dangerous sports, substance abuse, or unprotected sexual behavior.

Immediate Gratification: Impulsivity often results in a desire for immediate rewards or experiences, while sensation seekers are motivated by the desire for novel and stimulating experiences. The commonality between these two traits is the preference for immediate stimulation over waiting or planning for a future, more rewarding experience.

Low Conscientiousness: Both impulsivity and sensation seeking are negatively correlated with conscientiousness (the personality trait associated with careful planning, organization, and self-discipline). A person who is high in impulsivity and sensation seeking might tend to ignore future consequences and focus on the present moment.

Differences:

Motivation: Impulsivity is primarily driven by a lack of self-control and emotional regulation, leading to spontaneous and sometimes reckless decisions. Sensation seeking, however, is motivated by the desire for excitement and novelty rather than a lack of control. Sensation seekers intentionally pursue intense and varied experiences, while impulsive individuals might act impulsively even when those experiences aren't particularly novel or exciting.

Emotional Regulation: Impulsivity is often associated with poor emotional regulation, which can lead to hasty decisions or actions, especially in emotionally charged situations. In contrast, sensation seeking is not necessarily linked to poor emotional regulation—it's more about

actively seeking exciting and novel experiences, regardless of whether they are emotionally charged.

While "*impulsivity*" and "*sensation seeking*" are distinct traits, they are closely linked and often co-occur, especially in young adults. Both traits are associated with risk-taking behaviors and the desire for immediate gratification, but they differ in their motivations. Impulsivity is often linked to poor emotional control, whereas sensation seeking is motivated by a desire for novel, exciting experiences. Together, they can lead to both positive and negative outcomes depending on how they manifest and are managed. Understanding the relationship between the two can help in developing strategies to encourage safe, rewarding behaviors while reducing the risks associated with impulsivity and thrill-seeking activities.

CHAPTER II

Review of literature:

David R. Williams, Selina A. Mohammed, Jacinta Leavell, and Chiquita Collins (2010), in their paper published in Annals of the New York Academy of Sciences, examined racial disparities in health and highlighted the significant role of socioeconomic status (SES) in these differences. They noted that while SES disparities contribute to racial health inequalities, race also encompasses broader social inequalities that are not fully captured by traditional SES indicators. The authors emphasized the need for research that explores the complex interactions between social environments and health across the life course. Additionally, they pointed out that migration history and status are crucial factors in health outcomes, calling for further investigation into how race, SES, and immigrant status collectively influence health. To fully understand the impact of race on health, the paper also stressed the importance of studying the conditions under which medical care and genetic factors contribute to racial and SES-related health differences, identifying key research priorities in these areas.

Selcuk R. Sirin's 2005 meta-analysis, published in Review of Educational Research (Vol. 75, No. 3, pp. 417-453), examined the relationship between socioeconomic status (SES) and academic achievement in studies published between 1990 and 2000. The analysis included data from 74 independent samples, covering 101,157 students, 6,871 schools, and 128 school districts. The findings revealed a moderate to strong correlation between SES and academic achievement, though this relationship was influenced by factors such as the unit of analysis, data source, SES variable range, and the type of SES–achievement measure used. Additionally, school level, minority status, and school location played a role in shaping this correlation. Sirin also conducted a replication of a previous meta-analysis to determine if the SES–achievement relationship had changed since White's initial review. The results indicated a slight decline in the average correlation over time. The study concludes with discussions on the practical implications for future research and educational policy.

Paula A. Braveman and colleagues, in their 2005 JAMA article "Socioeconomic Status in Health Research: One Size Does Not Fit All," highlight the challenges of measuring SES in clinical and public health studies. They argue that SES is often used as a control variable, but its measurement limitations can impact research findings and policy implications. The authors

illustrate how racial/ethnic disparities in income, wealth, and education complicate socioeconomic comparisons. They also show that conclusions about racial/ethnic health disparities depend on which SES measure is used. To improve SES measurement, they recommend considering explanatory pathways, collecting comprehensive socioeconomic data, specifying measured factors, and acknowledging unmeasured influences. They emphasize the need for better SES data and more thoughtful use of existing information.

Jeffery Sobal and Albert J. Stunkard (1989), in their review published in Psychological Bulletin, analyzed 144 studies on the relationship between socioeconomic status (SES) and obesity. They found a strong inverse association between SES and obesity among women in developed societies, while the relationship was inconsistent for men and children. In contrast, in developing societies, a direct correlation between SES and obesity was observed across all groups—men, women, and children. Their review also examined societal attitudes toward obesity and thinness, showing that these perceptions align with the distribution of obesity across different SES levels. They identified several factors that may contribute to the inverse relationship between SES and obesity among women in developed societies, including dietary restraint, physical activity, social mobility, and genetic inheritance.

Nancy E. Adler and Joan M. Ostrove (1999), in their paper published in Annals of the New York Academy of Sciences, reviewed the research on socioeconomic status (SES) and health. They found that over the past 15 years, research has highlighted a graded association between SES and health, showing that health improves with higher SES, not just for those in poverty but across all SES levels. The paper discussed the SES-health gradient, focusing on the direction of causality, its generalizability across populations and diseases, and how different SES indicators are associated with health. Recent research has shifted towards exploring the mechanisms through which SES affects health, including macroeconomic factors, social environments, psychological and behavioral factors, and biological processes.

In another study, Jeffery Sobal and Albert J. Stunkard (1989), in Psychological Bulletin, reviewed 144 studies on SES and obesity. They found that women in developed countries showed a strong inverse relationship between SES and obesity, whereas this relationship was inconsistent for men and children. In developing countries, however, a direct link between SES and obesity was seen across all groups. They suggested that social attitudes toward obesity and

thinness align with the distribution of obesity by SES, with various factors like dietary restraint, physical activity, social mobility, and inheritance influencing these patterns.

Lindsay McLaren (2007), in her review published in Epidemiologic Reviews, updated Sobal and Stunkard's work on SES and obesity. She analyzed 333 studies and found that as socioeconomic development increased, the proportion of positive associations between SES and obesity grew, while negative associations decreased. The review also showed varying results based on SES indicators, with negative associations being most common in highly developed countries for women, especially with education and occupation, and positive associations in medium- and low-development countries related to income and material possessions. The findings suggested that globalization has influenced these patterns, reinforcing the idea of obesity as a social phenomenon influenced by both economic and sociocultural factors.

Leigh Sharma, Krista Kohl, Theresa A. Morgan, and Lee Anna Clark (2013), in their study published in the Journal of Personality and Social Psychology, examined the concept of impulsivity and its relationship to behavior. They highlighted the challenges of defining impulsivity within a personality framework due to its multiple pathways and the lack of agreement on its structure. Their research involved undergraduates who completed various self-report measures assessing impulsivity, retrospective questionnaires on past impulsive behaviors, and a prospective two-week assessment of impulsive actions. Using structural equation modeling, the researchers confirmed a three-factor model of "impulsigenic traits," which aligns with previous findings and supports the idea that impulsivity is a broad label encompassing distinct but behaviorally similar traits. Their results also identified a two-factor structure in both daily and less frequent impulsive behaviors. Additionally, their unique data collection approach allowed them to explore how these impulsigenic traits relate to other personality dimensions and predict real-life impulsive actions.

Moeller, Barratt, Dougherty, Schmitz, and Swann (2001) explore the link between impulsivity and various psychiatric disorders, proposing hypotheses about the underlying causes of these connections. Their review highlights that individuals with conduct disorder, personality disorders, substance use disorders, and bipolar disorder exhibit significantly higher impulsivity levels than other psychiatric patients or healthy individuals. They examine theoretical explanations for these associations, discuss methods for measuring impulsivity, and consider

treatment options, including behavioral and pharmacological interventions. Their findings suggest that impulsivity is a central feature of multiple psychiatric conditions and is closely tied to the biological foundations of these disorders. They emphasize the need for refined measures of impulsivity based on an unbiased theoretical framework to advance treatment research.

F. Gerard Moeller, M.D., Ernest S. Barratt, Ph.D., Donald M. Dougherty, Ph.D., Joy M. Schmitz, Ph.D., and Alan C. Swann, M.D., examine the link between impulsivity and psychiatric disorders, proposing hypotheses to explain these relationships. Research indicates that impulsivity is significantly higher in individuals with conduct disorder, personality disorders, substance use disorders, and bipolar disorder compared to other psychiatric patients or healthy individuals. The study reviews theoretical perspectives on this connection, methods for measuring impulsivity, and treatment options, emphasizing its physiological basis. Impulsivity, viewed through a biopsychosocial lens, is a core feature of several psychiatric conditions, and both behavioral and pharmacological interventions have shown effectiveness in managing it. The authors stress the importance of incorporating these treatments into comprehensive care plans for affected individuals.

Harriet de Wit and J. David Jentsch (Springer Nature, 2020) highlight the growing research interest in impulsivity and its role in both normal and pathological behaviors over the past 30 years. According to PubMed data, publications on impulsivity and inhibitory control have risen from approximately 700 in 1990 to over 4,000 in 2019. Significant advancements have been made in understanding the behavioral, neural, and genetic foundations of impulsive behavior, which is a key component in numerous psychiatric disorders, particularly drug use disorders, externalizing behaviors, and childhood disruptive behavior disorders. This volume compiles recent findings from various research areas, including studies on laboratory animals, healthy individuals, and clinical patients, integrating empirical research with theoretical analyses and practical applications. The first section examines the neurobiological mechanisms underlying impulsive behaviors. Pattij and Vanderschuren discuss different types of impulsivity, challenges in aligning human and animal studies, and the roles of dopamine, norepinephrine, opioid receptors, and ErbB signaling pathways in impulsivity. While early studies emphasized serotonin as a key neurotransmitter, their review highlights a more complex interplay of neurotransmitter systems. Groman explores experimental methods used to study impulsivity, linking them to reinforcement learning and temporal difference signals, and analyzing the

involvement of multiple neurotransmitters in risky decision-making. London, through human imaging studies such as PET and fMRI, examines neural mechanisms of impulsive decision-making in both healthy individuals and clinical patients, emphasizing the role of striatal D2- type dopamine receptors and corticostriatal connectivity in cognitive control and response inhibition. Understanding these neural processes is crucial for identifying potential therapeutic targets for impulsivity-related disorders.

Lucien Rochat, Joël Billieux, Jean Gagnon, and Martial Van der Linden (2018) explore the role of impulsivity in risky and excessive behaviors, such as aggression and compulsivity, in patients with brain damage, emphasizing the significant psychosocial consequences of these behaviors. While impulsivity is widely recognized as a key factor in these conditions, research on impulsivity within neuropsychology remains limited. The authors argue that understanding such behaviors requires acknowledging impulsivity as a multidimensional construct. They focus on the UPPS model of impulsivity, a well-validated framework that categorizes impulsivity into four dimensions: urgency, lack of premeditation, lack of perseverance, and sensation seeking. The article examines the psychological mechanisms underlying these dimensions, the laboratory tasks used to assess them, and their neural correlates. Additionally, the authors introduce a scale specifically designed to evaluate these facets of impulsivity in patients with brain damage. Their review highlights the importance of a multifactorial and integrative approach to impulsivity, providing insights into the brain systems and mechanisms involved. This model offers a valuable foundation for future research and has the potential to enhance the assessment and rehabilitation of impulsive behaviors in clinical settings.

Yari Gvion and Alan Apter (2011) review the existing literature on the relationship between impulsivity, aggression, and suicidal behavior. Using the keywords "impulsivity," "aggression," and "suicide," they conducted a search across PubMed, PsychLit, and ProQuest databases, analyzing significant studies for relevant insights. Their findings indicate a strong correlation between impulsivity, aggression, and suicidal behavior across psychiatric and non- psychiatric populations, as well as across different diagnostic categories. However, while impulsivity and aggression are closely linked, the exact nature of their relationship remains unclear due to overlapping definitions and conceptual ambiguities. The authors highlight inconsistencies and contradictions in the literature, likely stemming from difficulties in distinguishing and defining these concepts. They emphasize the need for future research to refine these definitions and further clarify how impulsivity and aggression contribute to various forms of suicidal behavior.

Catharine P. Cross, De-Laine M. Cyrenne, and Gillian R. Brown (2013) conducted a meta-analysis to examine sex differences in sensation-seeking, defined as the willingness to engage in novel or intense activities. This difference has been attributed to either evolved psychological mechanisms or culturally transmitted social norms. Using studies that applied Zuckerman's Sensation Seeking Scale, version V (SSS-V), they investigated whether these sex differences have changed over time. Their findings indicate that overall SSS-V scores, as well as differences in Disinhibition and Boredom Susceptibility, have remained stable over the years. However, the gap in Thrill and Adventure Seeking has decreased, potentially due to evolving social norms or outdated questions in that sub-scale. Their results suggest that while men and women consistently report different levels of sensation-seeking, the way these tendencies manifest in behavior can change over time. The authors propose that sex differences in sensation-seeking may arise from a combination of genetic predispositions and socially transmitted influences.

Lynne-Landsman, Graber, Nichols, and Botvin (2011) examined the stability and change in sensation seeking among 868 urban, minority youth (53% female) from 6th to 8th grade. Sensation seeking is traditionally considered a stable personality trait linked to risky behaviors, while reckless behavior theory suggests it increases during adolescence, contributing to heightened risk-taking. Using group-based trajectory analysis, the researchers identified three distinct patterns: a stable low group (20%), a moderate increasing group (60%), and a stable high group (20%). Youth in the stable low group consistently exhibited low levels of aggression, delinquency, and substance use. Those in the moderate increasing group started with minimal risk behaviors in 6th grade but showed significant increases over time. The stable high group demonstrated consistently high aggression and delinquency, along with rising substance use across middle school. These findings support both perspectives on sensation seeking and emphasize the complexity of categorizing adolescents solely as high or low sensation seekers.

MacPherson, Magidson, Reynolds, Kahler, and Lejuez (2010) investigated how changes in sensation seeking and risk-taking propensity influence early adolescent alcohol use. In a longitudinal study of 257 youth aged 9 to 12, participants completed self-reports on sensation seeking and past-year alcohol use, along with a behavioral task assessing risk-taking, across three annual assessments. The study found that both sensation seeking and risk-taking

propensity significantly increased over time, with evidence that the rise in risk-taking was not due to practice effects. Higher levels of these traits were consistently associated with past-year alcohol use at each assessment wave. Moreover, after controlling for initial alcohol use and trait levels, greater increases in sensation seeking and risk-taking predicted higher odds of future alcohol use. These findings highlight that it is not just baseline levels of these traits but their growth over time that contributes to early alcohol use, underscoring the importance of targeting these traits in prevention efforts.

Harden and Tucker-Drob (2011) explored adolescent development through the lens of social neuroscience, using longitudinal data from 7,640 participants in the National Longitudinal Study of Youth Children and Young Adults. This nationally representative sample was assessed biennially from 1994 to 2006. Employing latent growth curve models, the researchers examined age-related changes in self-reported impulsivity and sensation seeking between ages 12 and 24. Their study yielded three key findings. First, impulsivity and sensation seeking exhibited distinct developmental trajectories over time. Second, there was considerable individual variation in how these traits changed, with some adolescents showing rapid shifts while others remained stable. Third, the correlation between age-related changes in impulsivity and sensation seeking was modest and not statistically significant. These findings provide the first longitudinal behavioral evidence supporting the dual systems model of adolescent development.

Charnigo, Noar, Garnett, Crosby, Palmgreen, and Zimmerman (2013) investigated the combined influence of sensation seeking and impulsive decision-making on risky sexual behaviors in a large sample of sexually active young adults (N = 2,386). While previous research has linked these personality traits to sexual risk-taking, it remained unclear whether they function independently or interactively. Using regression modeling, the study found that both sensation seeking and impulsivity were consistently associated with various sexual risk behaviors across 11 different outcomes. Additionally, the findings revealed a synergistic effect of these traits in behaviors involving sex while using drugs, sex with a partner using alcohol, and sex with a partner using drugs. However, for other sexual risk behaviors, sensation seeking and impulsivity operated independently. The study discusses theoretical perspectives and implications for HIV and STD prevention strategies targeting individuals high in sensation seeking and impulsivity.

Sârbescu and Rusu (2021) conducted a systematic review and meta-analysis to identify key personality predictors of speeding, focusing on the traits of Anger-Aggression and Impulsive-Sensation Seeking. The study analyzed research from online databases and previous reviews to examine these associations. Using a random effects model, the findings revealed a small but significant correlation between Anger-Aggression and speeding ($r = 0.12$, $Z = 3.85$, $p < 0.001$). A stronger, though still low-magnitude, correlation was found between Impulsive-Sensation Seeking and speeding ($r = 0.23$, $Z = 6.54$, $p < 0.001$). Moderator analysis identified driver type as a significant factor; for professional drivers, neither predictor showed a significant association with speeding ($r = -0.004$, $p = 0.958$ for Impulsive-Sensation Seeking; $r = 0.02$, $p = 0.720$ for Anger-Aggression). These relationships were notably weaker in professional drivers compared to the general population and young drivers. Overall, the study confirmed the associations between speeding and both personality traits, though the effects were of low magnitude.

Chapter -III

METHODS:

In the present chapter, the objectives of the study and the specific research hypotheses have been detailed in line with the broad objects of chapter1. The variables of the study have been described and justified. Their operational definitions have been specified and the tools for assessing them have been described. The selection of the sample and the measures used have also been elaborated here. The procedure of data collection and the statistical tools employed have been narrated.

OBJECTIVES OF THE STUDY

- To study the difference of socio-economic status with respect to **sensation seeking** of young adults.
- To study the difference of socio-economic status with respect to **impulsivity (attention, Motor impulsivity, Self-control, Cognitive complexity, perseverance impulsivity, Cognitive instability)**

HYPOTHESES

- **H_{01}** --- There is no significant difference between *SENSATION SEEKING* and the groups of upper class and upper middle class of socioeconomic level.

- **H_{A1}** --- There is a significant difference between *SENSATION SEEKING* and the groups of upper class and upper middle class of socioeconomic level.

- **H_{02}** --- There is no significant difference between *IMPULSIVITY [* (i)attention, (ii)Motor impulsivity, (iii) Self-control, (iv)Cognitive complexity, (v)perseverance impulsivity, (vi)Cognitive instability] and the groups of upper class and upper middle class Of socioeconomic level.

- **H_{A2}** --- There is a significant difference between *IMPULSIVITY [* (i)attention, (ii)Motor impulsivity, (iii) Self-control, (iv)Cognitive complexity, (v)perseverance impulsivity, (vi)Cognitive instability]and the groups of upper class and upper middle class Of socioeconomic level.

SELECTION OF THE VARIABLES

A variable is defined as an event or condition which can have different values; ideally in experiments, an event or condition which can be measured. Variables may be defined as those attributes of objects, events, things, and being which can be measured. In other words, variables are characteristics or conditions that are manipulated, controlled or observed by the experimenter(A.K.Singh 2004). The present comparative study intends to determine the difference of socio-economic status with respect to impulsivity and sensation seeking on young adults of Kolkata. Thus, the main variables selected for this study are-

1. Socio-economic status
2. Impulsivity
3. Sensation seeking

SELECTION OF THE SOCIO-ECONOMIC VARIABLE

Socioeconomic status (SES) in the present study, refers to the social and economic position of an individual or group in relation to others, based on factors such as income, education, and occupation.

"Socioeconomic status is a composite measure that typically incorporates economic, social, and work status. It is measured through a combination of education, income, and occupation."

— American Psychological Association (APA), 2007

According to Kuppuswamy, socioeconomic status (SES) is a composite measure defined in 1976 that combines education, occupation, and family income to determine a person's position within the social hierarchy. This scale is often used to classify families into five groups: upper, upper-middle, lower-middle, upper-lower, and lower socioeconomic classes.

Components of Socioeconomic Status (SES)

1. Income

Income refers to the monetary earnings of an individual or household. It determines the ability to access basic needs like food, healthcare, education, and housing. Low income is often associated with higher levels of stress and limited opportunities. ***According to the American Psychological Association (APA, 2007),*** income is a core indicator of SES because it directly influences material living conditions.

2. Education

Education shapes an individual's knowledge, skills, and access to information. It also affects employment opportunities and earning potential. Higher education levels are linked to better health outcomes and longer life expectancy. ***Adler & Ostrove (1999***) emphasized that education not only reflects SES but also contributes to shaping health behaviors and access to healthcare.

3. Occupation

Occupation indicates the type and prestige of work one does. It often reflects both income level and social status. Certain occupations may come with more stress, physical risks, or job insecurity. ***Krieger et al. (1997)*** discussed how occupation is tied to social stratification and can affect exposure to health risks.

4. Wealth and Assets

Wealth includes not just income, but savings, property ownership, and other financial assets. It provides long-term economic security and a buffer during financial crises. ***Braveman et al. (2005)*** highlighted that wealth is a distinct SES component because it captures accumulated advantage or disadvantage over time.

5. Neighbourhood and Living Environment

The quality of the neighbourhood—such as safety, access to education, healthcare, clean water, and transportation—affects daily life and long-term health***. Evans (2004)*** noted that children from low-SES backgrounds often live in environments with more noise, crowding, and pollution, which negatively impacts development.

6. Social Capital and Access to Resources

Social capital refers to the networks, relationships, and norms that facilitate collective action. It influences one's ability to gain support, information, and services. ***Bourdieu (1986)*** introduced the concept of social capital as part of the broader forms of capital (economic, cultural, social) that define class and social mobility.

SELECTION OF THE IMPULSIVITY VARIABLE

Impulsivity is a multifaceted psychological construct that refers to a tendency to act quickly without adequate thought or consideration of the consequences. It is often associated with difficulty in delaying gratification, poor inhibitory control, and a preference for immediate rewards over long-term goals.
According to **Eysenck & Eysenck (1977)** impulsivity as "a tendency to act on the spur of the moment without deliberation, planning, or consideration of the consequences."

Moeller et al. (2001) Defined impulsivity as "a predisposition toward rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to the impulsive individual or others."

Operational Definition of Impulsivity

Impulsivity: Impulsivity is a multifaceted psychological trait characterized by a tendency to act quickly and without adequate consideration of the consequences. It involves behaviors such as risk-taking, poor response inhibition, difficulty delaying gratification, and making hasty decisions. Impulsivity can manifest in both cognitive (thought-related) and behavioral (action-related) forms and is often associated with various psychological conditions, including ADHD, substance use disorders, and mood disorders.

Response inhibition: Measured by tasks requiring the suppression of a prepotent response (e.g., the Stroop task or Go/No-Go tasks). Impulsivity would be indicated by a higher number of errors (failure to inhibit).

Risk-taking: Assessed through tasks involving choices with varying probabilities and magnitudes of outcomes (e.g., gambling tasks). Impulsivity might be defined as a preference for riskier options despite potential negative consequences.

Attentional impulsivity: Operationalized as difficulty focusing, being easily distracted, or acting without attending to all relevant information, often measured through self-report questionnaires or cognitive tasks.

Motor impulsivity: Defined as acting without thinking, rapid and unplanned actions, or difficulty inhibiting motor responses, often assessed through behavioral observations or self- report.

Six First-Order Factors of Impulsivity (Based on the Barratt Impulsiveness Scale - BIS- 11)

One of the most widely used self-report measures of impulsivity, the Barratt Impulsiveness Scale (BIS-11), posits a hierarchical factor structure. It identifies six first-order factors that contribute to the broader construct of impulsivity:

Attention: This factor reflects difficulties in focusing, concentrating, and maintaining attention on tasks. Individuals scoring high on this factor may be easily distracted and have trouble staying on track.

Cognitive Instability: This refers to having racing thoughts, difficulty keeping one's mind on a task, and experiencing mental disorganization.

Motor Impulsiveness: This factor captures the tendency to act without thinking, to be restless, and to engage in rapid, unplanned actions.

Perseverance: This reflects a lack of persistence and consistency in behavior, a tendency to give up easily on tasks, and an unstable lifestyle.

Self-Control: This factor relates to a lack of planning, foresight, and the ability to think things through carefully before acting. It also includes difficulties in controlling urges and desires.

Cognitive Complexity: This involves a lack of intellectual curiosity, a preference for simple tasks, and an avoidance of mentally challenging situations.

These six first-order factors often load onto three higher-order (second-order) factors in the BIS-11:

Attentional Impulsiveness: Combines Attention and Cognitive Instability.

Motor Impulsiveness: Combines Motor Impulsiveness and Perseverance.

Non-Planning Impulsiveness: Combines Self-Control and Cognitive Complexity.

SELECTION OF THE SENSATION SEEKING VARIABLE

Sensation seeking is a personality trait characterized by the pursuit of novel, complex, and intense experiences, and the willingness to take risks to achieve such experiences. It was originally conceptualized by psychologist ***Marvin Zuckerman***.

Sensation seeking plays a significant role in the psychological and social development of young adults. During this life stage—typically between 18 to 25 years—individuals seek to explore their identity, gain independence, and engage in novel experiences. Sensation seeking motivates behaviors that support these developmental goals, such as trying new activities, forming diverse social connections, and taking on challenges that build resilience and self- confidence.

While it can lead to risk-taking behaviors, such as substance use or unsafe driving, sensation seeking also fosters positive growth when channeled constructively. It is linked to creativity, adaptability, adventurousness, and openness to learning. In academic, professional, and personal settings, moderate levels of sensation seeking can encourage innovation, curiosity, and the pursuit of meaningful goals.

Components:

1. Thrill- and Adventure-Seeking: Some people may seek excitement in risky but socially acceptable activities such as parachute jumping, sky diving, and race-car driving. Whether or not those who have taken the test have had an opportunity to engage in these activities, their expression of a desire to do so is highly predictive of their behavior in many other areas.

2. Experience-Seeking: This represents the desire to seek sensation through the mind, the senses, and a nonconforming lifestyle. Some people reject the conventional middle-class lifestyle and seek a freer existence with unusual friends, frequent travel, or artistic expression.

3. Disinhibition: Those who have chosen the middle-class lifestyle but find it boring may seek escape in social drinking and partying. Zuckerman calls this a kind of "extraverted sensation-seeking"—some of us need other people as sources of stimulation.

4. **Boredom Susceptibility:** This is not so much another form of sensation seeking as it is a low tolerance for experience that is repetitious or constant. While not all sensation-seekers are incapable of facing long periods with little external stimulation, the boredom-susceptible person gets extremely restless under such conditions.

PARTICIPANTS OF THE STUDY

For the present study, a sample of 60 young adults from the age range of 18-25 years was chosen from Kolkata.

SAMPLING TECHNIQUES—SIMPLE RANDOM SAMPLING.

INCLUSION CRITERIA

1. An age range of 18-25 years of young adults were chosen.
2. Young adults living with family members.
3. Sample was chosen from young adults those who located in India only, (all the subjects are a citizen of India).
4. Subject must have an understanding of English language and agree to participate in the research.

EXCLUSION CRITERIA

1. Young adults and their families who have a history of any psychiatric illness or under psychiatric medication.
2. Young adults and their families who have a history of any physical illness
3. Young adults who are employed.

Tools used in the study-

- **General Health Questionnaire (GHQ-28) by Goldberg and Hiller (1979)**

Description - GHQ was designed to be a self-administered screening test aimed at detecting short-term changes in mental health among respondents. It was designed by ***Goldberg and Hiller (1979)*** as a state measure. The questionnaire is objective in the sense that it does not require the person administering it to make subjective assessment about respondents. There are different versions of GHQ available depending upon the nature of items. GHQ-28 containing 28 items was derived from factor analysis of GHQ
60. It consists of 4 subscales for somatic symptoms, anxiety and insomnia, social dysfunction and severe depression. It is as good as any other version of GHQ as a case detector, at the same time it gives scaled sub-scores, if necessary. Each item has 4 response alternatives. Its sensitivity was found to be 0.8, and specificity 0.88.
The GHQ-28 has been adapted in Bengali culture by Basu and Dasgupta (1996). There was no difficulty in its applicability in this culture. In this adaptation item analysis was done. Its split half reliability was found to be 0.97. Its sensitivity and specificity were
1.00 and 0.88 respectively.
Administration: The GHQ-28 is a self-administering screening test. There is no time limit to complete it. The instruction precedes the inventory.

Scoring and Interpretation: Scoring was done by GHQ method (0-0-1-1) as suggested by Goldberg and Williams (1988). Threshold for case identification was taken as 4/5, i.e., score 4 signifies a non-psychiatric case and 5 signifies a probable case. Total score ranges from 0 to 28.
A copy of the questionnaire is presented in Appendix

Selection of the Tool: In the present study, the General Health Questionnaire was used among the prospective subjects to screen out those with a psychiatric disorder. This particular test was selected because:
(a) It is a screening test, applicable in India, it is one of the most comprehensive and compact ones. The GHQ-28 is also a popular one with only 28 items yet including 4 domains.
(b) It is quite easy to administer and the scoring procedure is also very simple.

(c) A number of earlier studies in Calcutta have used this version (Dasgupta and Basu, 1997; Basu et al., 1999) and have found it satisfactory.

❖ **The Kuppuswamy Socioeconomic Status scale (SES):**

This is the most commonly used scale for determining the SES of an urban family. Kuppus- wamy scale was developed for assessing the SES of an urban individual. It took three parameters into account, namely, education, occupation, and income of the individual It was modified to enable SES assessment of a family rather than an individual. The parameters were modified as education and occupation of the HOF and the income of. the whole family, pooled from all the sources. These parameters are defined later in this section.

Education of head of family	Score	Occupation of head of family	Score	Total per capita family income per month (as given originally in 1976)	Score
Professional degree	7	Professional	10	2000 and above	12
Graduate	6	Semi profession	6	RS 1000-1999	10
Intermediate/diploma	5	Clerical/shop/farm	5	RS 750–999	6
High school	4	Skilled worker	4	RS 500–749	4
Middle school	3	Semiskilled worker	3	300-499	3
Primary school	2	Unskilled worker	2	RS 101–299	2
Illiterate	1	Unemployed	1	Less than RS 100	1

The total score is calculated by adding up all the three scores, namely, education, occupation, and total family income. According to the total score thus calculated, the family is placed in the appropriate socioeconomic class as explained in the following Table. Table:

Total score	Socioeconomic class
26–29	Upper class
16–25	Upper middle
11–15	Lower middle
5–10	Upper lower
Below 5	Lower

The Kuppuswamy Socioeconomic Status (SES) scale was initially developed in 1976 and has been updated several times since. The scale's core components, including education, occupation, and income, were modified over the years. For example, income ranges are regularly adjusted based on changes in the Consumer Price Index (CPI) to account for inflation, according to a study on ResearchGate.

Timeline of Updates:

1976: Initial scale development.

Regular updates: Income ranges are adjusted based on changes in CPI. 2021:

One study updated the scale based on CPI-IW January 2021.

2023: Another study provided a 2023 update, refining income points and ensuring accurate categorization.

2024: Further updates continue to be made to reflect changes in the Consumer Price Index. The scale's updates ensure that it remains relevant and accurate in classifying families based on their socioeconomic status, taking into account changes in purchasing power over time.

A copy of a questionnaire is presented in Appendix

- **Sensation Seeking Scale Form V (SSS-V)**

Concept

Arousal theory assumes that people seek an optimum level of stimulation. Marvin Zuckerman has argued that people differ in the amount of stimulation they need or want and hence in their "sensation-seeking." Most research indicates that moderate levels of arousal are adaptive: Either too low or too high a level is disruptive. It's not surprising then that most people seek a moderate level of arousal by controlling the amount of external stimulation. Too much stimulation, and they retreat to a quiet place. Too little, and they seek greater activity. This activity seeks to measure students' levels of arousal.

Materials

(Handout 1.1)

Description

Handout 1.1 is a portion of **Zuckerman's scale** for measuring ***sensation-seeking behaviour***. In scoring their responses, students should count one point for each of the following items they have circled: 1A, 2A, 3A, 4B, 5A, 6B, 7A, 8A, 9B, 10B, 11A, 12A, 13B. Zuckerman suggests the following interpretation of total scores: 1–3 is **very low** on sensation-seeking; 4–5 is **low**; 6–9 is **average;** 10–11 is **high**; 12–13 is **very high**. Zuckerman emphasizes caution in interpreting scores, however, because norms are based on the scores of college students. As people get older, their scores tend to be lower.

Zuckerman and other researchers have identified four forms of sensation seeking.

- **Thrill- and Adventure-Seeking:** Some people may seek excitement in risky but socially acceptable activities such as parachute jumping, sky diving, and race-car driving. Whether or not those who have taken the test have had an opportunity to engage in these activities, their expression of a desire to do so is highly predictive of their behavior in many other areas.
- **Experience-Seeking:** This represents the desire to seek sensation through the mind, the senses, and a nonconforming lifestyle. Some people reject the conventional middle- class lifestyle and seek a freer existence with unusual friends, frequent travel, or artistic expression.
- **Disinhibition:** Those who have chosen the middle-class lifestyle but find it boring may seek escape in social drinking and partying. Zuckerman calls this a kind of "extraverted sensation-seeking"—some of us need other people as sources of stimulation.
- **Boredom Susceptibility:** This is not so much another form of sensation seeking as it is a low tolerance for experience that is repetitious or constant. While not all sensation-seekers are incapable of facing long periods with little external stimulation, the boredom-susceptible person gets extremely restless under such conditions.

1. Development of the Sensation-Seeking Scale (SSS)

Original Developer: Dr. Marvin Zuckerman, an American psychologist known for his work on personality and sensory deprivation.

Initial Development: The first version of the scale was developed in 1964.

Major Revision: The most widely used version, the Sensation Seeking Scale Form V (SSS-V), was developed in 1978.

A copy of a questionnaire is presented in Appendix

- **The Barratt Impulsiveness Scale-11 (BIS-11)**

The Barratt Impulsiveness Scale (BIS) is a widely used measure of impulsiveness. It includes 30 items that are scored to yield ***six first-order factors (attention, motor, self-control, cognitive complexity, perseverance, and cognitive instability impulsiveness)*** and ***three second-order factors (attentional, motor, and non-planning impulsiveness)***.

The BIS is the most widely used self-report measure of impulsive personality traits. As of June 2008, Web of Knowledge (an academic citation indexing and search service) tallied 457 journal citations of the 1995 article which defined the factor structure of the 11th version of the Barratt Impulsiveness Scale. Although initially developed in the United States, the BIS-11 has been applied widely around the world.

The first version of the scale, the BIS-1, was released in 1959. The current version, the ***BIS- 11***, was released in ***1995***.

Scoring:

The ***BIS-11*** is a 30-item self-report questionnaire that is scored to yield a total score, three second-order factors, and six first-order factors. The questions are published in the 1995 references article. The following is a list of the items contributing to each factor score.

First-order factors Item content

Attention:5, 9*, 11, 20*, 28

Motor: 2, 3, 4, 17, 19, 22, 25

Self-Control: 1*, 7*, 8*, 12*, 13*, 14 Cognitive

Complexity:10*, 15*, 18, 27, 29*

Perseverance: 16, 21, 23, 30*

Cognitive Instability: 6, 24, 26

Second-order factorsItem content

Attentional:5, 6, 9*, 11, 20*, 24, 26, 28

Motor: 2, 3, 4, 16, 17, 19, 21, 22, 23, 25, 30*

Nonplanning: 1*, 7*, 8*, 10*, 12*, 13*, 14, 15*, 18, 27, 29*

Validity

Patton et al. reported internal consistency coefficients for the BIS-11 total score that range from 0.79 to 0.83 for separate populations of under-graduates, substance-abuse patients, general psychiatric patients, and prison inmates.

Modified versions

Short versions of the BIS-11 have been developed. The BIS-15 developed by Spinella includes 15 of the original 30-item BIS-11 and has been used in several other languages such as German, Spanish, French, Thai, and Kannada. There is also an Italian version who has been labelled BIS-15 developed by Maggi and colleagues but shares only 12 items with Spinella's BIS-15. The BIS-Brief includes eight items of the original 30-item BIS-11.

A copy of a questionnaire is presented in Appendix

PROCEDURE

This study mainly focused on examining the difference of socio-economic status (SES) on sensation seeking and various dimensions of impulsivity among young adults in Kolkata, India. To begin with, standardized and well-validated psychological scales relevant for socio- economic status, sensation seeking and impulsivity were carefully reviewed and selected. After selecting the proper scales, a data sheet was created and incorporating these scales along with demographic details such as name, age, gender, family type, and informed consent was taken from each participant. Once the data has been collected, the data has been moved to Microsoft Excel sheet for further scoring and calculations.

STATISTICAL ANALYSIS

The statistical analysis focused on summarizing data, checking for normality, and comparing group means. Descriptive statistics, including the mean, standard deviation, and kurtosis, were calculated to describe the central tendency, variability, and shape of the distribution for key variables (Sensation seeking, Attention, Motor, Self -control, Cognitive Complexity,

perseverance, cognitive instability) across the entire sample. The mean values for these variables provide a summary of the average score observed for each measure. Tests of normality, using the Shapiro-Wilk tests, were conducted to ensure that the data met the normality assumption required for subsequent inferential tests, specifically within the Upper Class and Upper Middle groups. Independent samples t-tests were then employed to examine whether the mean scores on the variables differed significantly between the Upper Class and Upper Middle groups, with Levene's test used to assess the equality of variances between the groups.

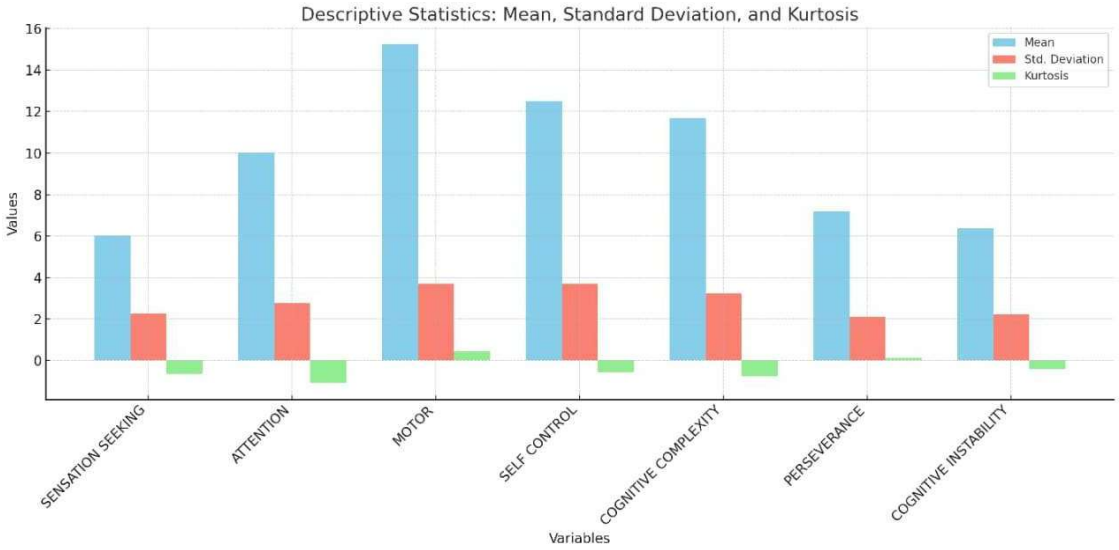
CHAPTER IV

RESULTS:

- **Descriptive statistics**

Table 1: The table below shows the value of mean, std. deviation and kurtosis of young adults with respective of their socio-economic classes.

Variables				**kurtosis**	
	N	**Mean**	**Std. Deviation**	**Statistic**	**Std. Error**
SENSATION SEEKING	60	**6.0167**	**2.25111**	**-.640**	**.608**
ATTENTION	**60**	**10.0167**	**2.78915**	**-1.049**	**.608**
MOTOR	**60**	**15.2500**	**3.68977**	**.435**	**.608**
SELF CONTROL	**60**	**12.4833**	**3.69375**	**-.567**	**.608**
COGNITIVE COMPLEXITY	**60**	**11.6833**	**3.23378**	**-.766**	**.608**
PERSEVERANCE	**60**	**7.1833**	**2.12724**	**.119**	**.608**
COGNITIVE INSTABILITY	**60**	**6.3833**	**2.24055**	**-.399**	**.608**



GRAPH 1 – Graphical representation of the value of mean, std. deviation and kurtosis of young adults with respective of their socio-economic classes.

The table presents descriptive statistics for 60 young adults on various psychological traits. Motor scores had the highest mean (15.25), while Sensation Seeking had the lowest (6.02). Standard deviations indicate moderate variability, with Motor and Self Control being most variable. Kurtosis values are all within normal range (±2), suggesting that the data distributions are roughly normal, with Attention being slightly more peaked and Cognitive Complexity slightly flatter.

Test of Normality

Table 2: The Table Below Shows The Shapiro-Wilk Test of Normality Across Socioeconomic Levels.

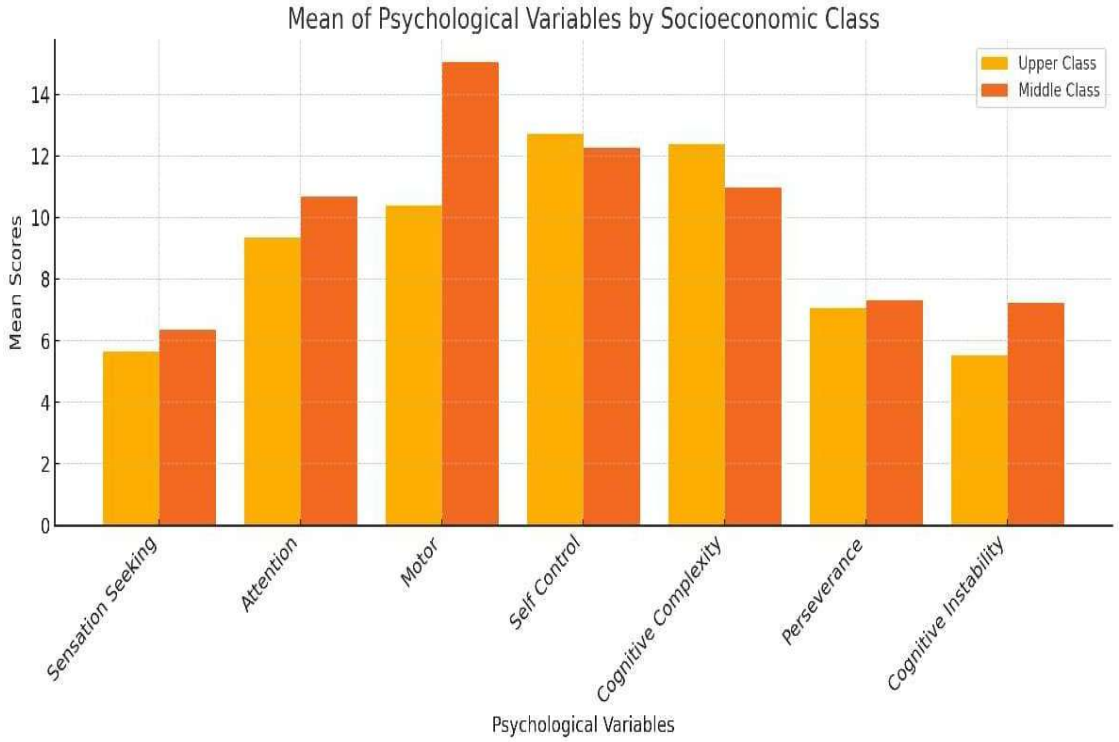
Socioeconomic levels		Shapiro-wilk		
		Statistic	**df**	**Significance**
SENSATION SEEKING	Upper Class	.919	30	.025
	Middle Class	.951	30	.176
ATTENTION	Upper Class	.945	30	.126
	Middle Class	.934	30	.064
MOTOR	Upper Class	.945	30	.127
	Middle Class	.978	30	.758
SELF CONTROL	Upper Class	.950	30	.167
	Middle Class	.965	30	.408
COGNITIVE COMPLEXITY	Upper Class	.962	30	.348
	Middle Class	.925	30	.036

PERSEVERANCE	Upper Class	.947	30	.143
	Middle Class	.931	30	.054
COGNITIVE INSTABILITY	Upper Class	.932	30	.055
	Middle Class	.959	30	.301

The image shows the Shapiro-Wilk Test of Normality results for different psychological variables across upper class and middle-class socioeconomic levels (N=30 each). The Shapiro- wilk test revealed that most variables followed a normal distribution across upper class and middle-class socioeconomic levels.

Table 3: Mean and Standard Deviation of Psychological Variables across Socioeconomic Levels

variables	Socioeconomic levels	N	Mean	Std. Deviation
SENSATION SEEKING	Upper Class	30	5.6667	2.49597
	Middle Class	30	6.3667	1.95613
ATTENTION	Upper Class	30	9.3667	2.78522
	Middle Class	30	10.6667	2.68242
MOTOR	Upper Class	30	15.1667	3.93992
	Middle Class	30	1503333	3.48725
SELF CONTROL	Upper Class	30	12.7000	3.97536
	Middle Class	30	12.2667	3.44347
COGNITIVE COMPLEXITY	Upper Class	30	12.4000	2.76181
	Middle Class	30	10.9667	3.54754
PERSEVERANCE	Upper Class	30	7.0667	1.99885
	Middle Class	30	7.3000	2.27657
COGNITIVE INSTABILITY	Upper Class	30	5.5333	1.77596
	Middle Class	30	7.2333	2.35889



GRAPH 3-- Graphical representation of the Shapiro-Wilk Test of Normality Across Socioeconomic Levels.

The table presents the mean scores and standard deviations of various psychological variables among upper and middle socioeconomic groups (N = 30 per group).

- Impulsivity and Cognitive Instability were higher in the Middle-Class group (M = 6.37 and 7.23) compared to the Upper Class (M = 5.67 and 5.53).
- Attention and Motor scores were also slightly higher in the Middle-Class group.
- Self-Control was greater in the Upper Class (M = 12.79) than in the Middle Class (M = 10.50).

- Cognitive Complexity was relatively similar across both groups.
- Perseverance scores were comparable across groups, with the Middle Class scoring slightly higher.
-

❖ Independent sample t test

Table 4: Results of Independent Samples t-Test Comparing Group Differences Across Psychological Variables

variables		Sig.	t-value	df	Mean difference	Std. Error Difference
SENSATION SEEKING	Equal variances assumed	.096	-1.209	58	-.70000	.57897
ATTENTION	Equal variances assumed	.783	-1.841	58	-1.30000	.70600
MOTOR	Equal variances assumed	.571	-.173	58	-.16667	.96062
SELF CONTROL	Equal variances assumed	.522	.451	58	.43333	.96022
COGNITIVE COMPLEXITY	Equal variances assumed	.035*	1.746	58	1.43333	.82083
PERSEVERANCE	Equal variances assumed	.505	-.422	58	-.23333	.55312
COGNITIVE INSTABILITY	Equal variances assumed	.167	-3.153	58	-1.70000	.53909

An independent samples t-test was conducted to assess whether there were statistically significant differences between two groups on various psychological dimensions, including sensation seeking, attention, motor impulsivity, self-control, cognitive complexity, perseverance, and cognitive instability.

The analysis indicated that cognitive complexity showed a statistically significant difference between the groups, $t(58) = 1.746$, $p = .035$. The mean difference was 1.43, suggesting that one group scored significantly higher in cognitive complexity compared to the other. This finding implies that the cognitive processing and abstract reasoning abilities may vary depending on group characteristics (e.g., socioeconomic background, age, or other categorical variables).

In contrast, no statistically significant differences were found in the remaining variables. For sensation seeking, the difference was not significant, $t(58) = -1.209$, $p = .096$, despite a moderate mean difference of -0.70. Similarly, attention ($t(58) = 1.841$, $p = .783$) and motor impulsivity ($t(58) = -0.173$, $p = .571$) did not differ significantly between groups.

The variables self-control ($t(58) = 0.451$, $p = .522$), perseverance ($t(58) = -0.422$, $p = .505$), and cognitive instability ($t(58) = -3.153$, $p = .167$) also yielded non-significant results. While the mean difference in cognitive instability (-1.70) was relatively large in magnitude, the lack of statistical significance suggests this difference may be due to random variation rather than a true effect.

In summary, the findings suggest that except for cognitive complexity, there are no significant group differences across the other psychological variables examined. The significant result for cognitive complexity warrants further investigation to explore the underlying factors contributing to this difference.

In the present study, H_{01} was accepted, indicating no significant difference in sensation seeking between upper and upper middle-class groups. H_{02} was partially accepted: (i)attention, (ii)Motor impulsivity, (iii) Self-control, (V) perseverance, and (vi) cognitive instability showed no significant differences (H_{02} accepted for these), while(iv) cognitive complexity showed a significant difference (H_2 accepted for cognitive complexity and H_{02} rejected for it).

CHAPTER V

Discussion

The present study revealed a statistically significant difference in cognitive complexity across socioeconomic status (SES) groups, with young adults from higher SES backgrounds exhibiting greater cognitive complexity than those from lower SES groups. This finding is both theoretically and empirically meaningful, offering insights into how socioeconomic environments may shape the cognitive styles and regulatory capacities of individuals during a critical developmental period.

Cognitive complexity refers to the ability to perceive, process, and respond to information in a nuanced and integrative manner. It involves the capacity for abstract thinking, perspective-taking, and the consideration of multiple variables in decision-making. Higher cognitive complexity is associated with more flexible thinking, better problem-solving, and more adaptive behavioral responses — all of which can serve as protective factors against impulsive and risky behavior.

The finding that cognitive complexity varies with SES aligns with several strands of research suggesting that enriched environments — characterized by educational quality, cognitive stimulation, and emotional security — contribute significantly to the development of complex cognitive processing. In the Indian context, particularly in urban areas like Kolkata, there exists a pronounced disparity in access to such enriching conditions.

Young adults from higher SES families typically have access to:

- Better schooling with an emphasis on critical thinking and exploratory learning,
- Participation in diverse extracurricular activities that stimulate cognitive and emotional growth,
- Family environments that encourage dialogue, independent thinking, and planning for the future.

In contrast, lower SES individuals often encounter:

Educational institutions with rote-based teaching methods and limited academic resources,

Higher levels of environmental stress, including financial instability, crowded living conditions, and reduced access to health and mental health services,

Parental figures who may be preoccupied with economic survival, thus limiting opportunities for guided cognitive-emotional development.

These conditions likely inhibit the development of cognitive complexity, pushing individuals toward more concrete, immediate, and sometimes impulsive modes of thinking and behavior. This may help explain the elevated impulsivity and reduced capacity for long-term planning often observed in lower SES populations — not as a matter of inherent trait differences, but as a consequence of systemic inequality and environmental deprivation.

Furthermore, the Indian cultural context adds another layer of complexity. The pressure to conform to traditional norms, the emphasis on obedience over autonomy in many lower SES households, and the stigma surrounding mental health may also suppress the development of metacognitive skills that support cognitive complexity. Conversely, higher SES families, particularly those influenced by globalized or liberal educational philosophies, may foster environments more conducive to cognitive exploration and flexibility.

In this light, the study's findings support the bioecological model of development, which emphasizes the interaction between individual traits and environmental contexts. They also echo the developmental psychopathology perspective, which views cognitive traits like complexity not as fixed attributes, but as malleable outcomes shaped by exposure, opportunity, and adversity.

Importantly, these findings call for interventions that aim not only to manage impulsivity in youth but also to **expand cognitive complexity**, especially in socioeconomically disadvantaged populations. This could include:

- School-based programs that promote critical thinking, decision-making, and emotional literacy;
- Community initiatives aimed at reducing environmental stress and enhancing supportive social networks;

- Policy-level changes to reduce educational inequality and improve access to resources.

In conclusion, the significant SES-based differences in cognitive complexity found in this study suggest that efforts to reduce impulsive and sensation-seeking behaviors among Indian youth must go beyond individual-level interventions and address the broader socioeconomic determinants of cognitive development.

CHAPTER VI

Conclusion

This study explored the role of socioeconomic status (SES) in shaping impulsivity and sensation seeking among young adults in Kolkata, India. The findings offer significant insights into how social and environmental contexts influence psychological functioning in emerging adulthood — a phase marked by identity exploration, risk-taking, and increasing autonomy.

A key result of this study was the significant difference in cognitive complexity across SES groups, with higher SES individuals demonstrating greater cognitive complexity. This suggests that individuals from more privileged backgrounds are more likely to engage in nuanced thinking, integrate multiple perspectives, and regulate their behaviors in adaptive ways. Such cognitive advantages are likely shaped by access to quality education, enriched family environments, and exposure to opportunities for personal development — all of which are more commonly available to higher SES groups.

By contrast, lower SES individuals, who often grow up in resource-scarce environments with limited educational and psychosocial support, may not have the same opportunities to develop high levels of cognitive complexity. This may increase their vulnerability to impulsive and sensation-seeking behaviors, not as a reflection of personal failure, but as an outcome of cumulative disadvantage and constrained cognitive development.

The study therefore highlights that impulsivity and sensation seeking are not simply traits rooted in individual personality, but are deeply embedded in socioeconomic and cultural contexts. In India, where inequality is

both stark and persistent, these findings have critical implications for mental health services, educational policy, and youth development programs.

Addressing impulsive behaviors in young adults, especially those from lower SES backgrounds, requires multi-level interventions — including cognitive training, life skills education, stress management, and structural reforms aimed at reducing socioeconomic disparities. Enhancing cognitive complexity may serve not only as a buffer against impulsivity but also as a pathway to improved decision-making, emotional regulation, and overall psychosocial functioning.

In sum, this study underscores the importance of viewing psychological traits through a contextual and developmental lens, and calls for socially responsive strategies to support the cognitive and emotional well-being of young people in a rapidly changing urban India.

Limitations of The Study

While this study offers valuable insights into the role of socio-economic status in shaping impulsivity traits among young adults in Kolkata, several limitations must be acknowledged:

- **Limited Sample Size and Scope**

The study was conducted with a relatively small sample size (N = 60), drawn from only two socio-economic categories—Upper Class and Upper Middle Class. This narrow scope limits the generalizability of findings across the full socio-economic spectrum, particularly excluding lower-income and working-class populations, who may experience impulsivity and sensation seeking in markedly different ways due to more acute stressors and resource constraints.

- **Geographic and Cultural Specificity**

The research was confined to Kolkata, a specific urban setting with its own cultural, educational, and economic landscape. While the findings are contextually rich, they may not fully translate to rural Indian populations or even to other metropolitan regions where SES dynamics and stress patterns may differ.

- **Limited Analysis of Gender Differences**

Although gender could be an important moderating factor in impulsivity and sensation seeking, this study did not analyze gender differences due to constraints in sample size and available data. A more balanced and larger sample might have enabled meaningful gender-based comparisons.

- **Constraints in Variable Inclusion**

The study focused primarily on socio-economic status due to time limitations and resource constraints. While there was an initial intention to incorporate additional variables such as education level, parental background, and peer influences, the restricted timeline of the dissertation process prevented their inclusion. Expanding the range of variables in future research could offer a more comprehensive understanding of the factors influencing impulsivity and sensation seeking.

- **Impact of Time and Data Limitations**

The limited duration available for data collection and analysis constrained the depth and breadth of the research. With a longer timeframe and access to a larger and more diverse dataset, the study could have yielded more robust and generalizable findings, thereby enhancing the overall success and impact of the dissertation.

Implications and Applicability of the present study

Despite these limitations, the study offers several practical and theoretical implications, especially within the context of psychological development and public policy:

1. Educational Reforms for Cognitive Development: The findings suggest the need for curriculum interventions in low-resource schools to promote analytical thinking, reflective decision-making, and executive functioning. Teaching strategies that prioritize dialogue, inquiry, and problem-solving may foster higher cognitive complexity, especially in students from lower SES backgrounds.

2. Mental Health Services Targeting Executive Skills: Behavioral and cognitive training programs, especially those focused on enhancing attention, planning, and self-regulation, can be particularly effective in reducing impulsive tendencies in socioeconomically disadvantaged youth.

3. Parental and Community Engagement: Programs that educate and empower parents from lower SES groups to provide cognitively stimulating environments — through storytelling, open conversations, or structured activities — could contribute to improved cognitive development in their children.

4. Policy-Level Interventions: Findings support the need for policy initiatives that reduce socioeconomic inequality and enhance access to quality education, healthcare, and youth development services. Initiatives such as midday meal schemes, digital learning access, and scholarships for higher education could bridge SES-related developmental gaps.

5. Workplace and Career Counseling: As impulsivity and sensation seeking may influence academic and career choices, career guidance programs that consider personality traits and cognitive styles can support young adults in making better-informed decisions aligned with their long-term goals.

6. Scope for Future Research: Further research using longitudinal designs, larger and more diverse samples, and multi-method approaches (including observational and cognitive testing) can build on the present findings. Exploring the role of peer influence, digital exposure, and urban stressors may also yield valuable insights.

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APPENDICES

APPENDIX A

Informed Consent Form for Participation

Final Year Student of M.Sc in Applied Psychology (semester 4) Email id: trishnabar11@gmail.com Contact no: 9836213577

Purpose of the Dissertation: This dissertation is being conducted as a part of the post graduate course in Applied Psychology in Sister Nivedita University. The purpose of the work is to explore the role of gender and socioeconomic differences on sensation seeking, impulsivity and decision making of male and female young adults.

What You Will Be Asked to do in the Research: If you volunteer to participate, you will be asked to provide some information and respond to some questions of some questionnaires. Your answers will not be judged on the basis of right and wrong. The answer of each individual will only be analyzed to arrive at the research result.

Risks and Discomforts: No potential risks or discomfort from your participation in the research work is foreseen.

Benefits of the Research and Benefits to You: This study will not bring you specific benefits outside of an opportunity to share your views and opinions. Your participation, however, will be of considerable benefit solely for the purpose of research and advancement of knowledge in the field.

Voluntary Participation: Your participation in the study is completely voluntary and you may refuse to answer any question or choose to stop participating at any time without any penalty. Your decision not to volunteer will not influence your relationship with the researcher.

Confidentiality: All information you supply during the research will be held in confidence and, unless you specifically indicate your consent, your name will not appear in any report or publication of the research. Your data will be safely stored in a locked facility and only the researcher will have access to this information. Confidentiality will be provided to the fullest extent

APPENDIX A _INFORMATION SCHEDULE

NAME:

AGE:

GENDER:

EDUCATION:

FAMILY SIZE:

FAMILY TYPE:

FAMILY INCOME/month (approx.):

FATHER'S AGE:

FATHER'S EDUCATION QUALIFICATIONS:

FATHER'S OCCUPATION:

MOTHER'S AGE:

MOTHER'S EDUCATION QUALIFICATIONS:

MOTHER'S OCCUPATION:

PRESENCE OF ANY PHYSICAL ILLNESS: yes / No IF
YES, SPECIFY:

PRESENCE OF ANY MENTAL ILLNESS: Yes / No

- IF YES, SPECIFY:
- NO. OF SIBLINGS:

APPENDIX B

Instructions: Please answer all questions by marking the answer that best reflects your experience over the past few weeks.

Scoring: Each question has four possible answers, ranging from "Better than usual" to "Much worse than usual".

Questions:

A. General Well-being				
Have you recently been feeling perfectly well and in good health?	Better than usual	Same as usual	Worse than usual	Much worse than usual
Have you recently been feeling in need of a good tonic?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently been feeling run down and out of sorts?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently felt that you are ill?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently been getting any pains in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently been getting a feeling of tightness or pressure in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently been having hot or cold spells?	Not at all	No more than usual	Rather more than usual	Much more than usual
B. Anxiety and Depression				
Have you recently lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently had difficulty in staying asleep once you are off?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently been getting edgy and bad-tempered?	Not at all	No more than usual	Rather more than usual	Much more than usual

Have you recently been getting scared or panicky for no good reason?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently found everything getting on top of you?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently been feeling nervous and strung up all the time?	Not at all	No more than usual	Rather more than usual	Much more than usual
C. Social Dysfunction				
Have you recently been managing to keep yourself busy and occupied?	More so than usual	Same as usual	Rather less than usual	Much less than usual
Have you recently been taking longer over the things you do?	Quicker than usual	Same as usual	Longer than usual	Much longer than usual
Have you recently felt on the whole you were doing things well?	Better than usual	About the same	Less well than usual	Much less well
Have you recently been satisfied with the way you've carried out your task?	More satisfied than usual	About the same as usual	Less satisfied than usual	Much less satisfied
Have you recently felt that you are playing a useful part in things?	More so than usual	Same as usual	Less useful than usual	Much less useful
Have you recently felt capable of making decisions about things?	More so than usual	Same as usual	Less so than usual	Much less capable
Have you recently been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Less so than usual	Much less than usual
D. Severe Depression				
Have you recently been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently felt that life is entirely hopeless?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently felt that life isn't worth living?	Not at all	No more than usual	Rather more than usual	Much more than usual
Have you recently thought of the possibility that you might do away with yourself?	Definitely not	I don't think so	Has crossed my mind	Definitely have
Have you recently found at times you couldn't do anything because your nerves were too bad?	Not at all	No more than usual	Rather more than usual	Much more than usual

APPENDIX CA

Directions: People differ in the ways they act and think in different situations. This is a test to measure some of the ways in which you act and think. Read each statement and put an X on the appropriate circle on the right side of this page. Do not spend too much time on any statement. Answer quickly and honestly

	Rarely/Never	Occasionally Often	Almost	often	Almost Always/ Always
1 I plan tasks carefully.					
2 I do things without thinking.					
3 I make-up my mind quickly.					
4 I am happy-go-lucky.					
5 I don't "pay attention."					
6 I have "racing" thoughts.					
7 I plan trips well ahead of time.					
8 I am self-controlled.					
9 I concentrate easily.					
10 I save regularly.					
11 I "squirm" at plays or lectures.					
12 I am a careful thinker.					
13 I plan for job security.					
14 I say things without thinking.					
15 I like to think about complex problems.					
16 I change jobs.					
17 I act "on impulse."					
18 I get easily bored when solving thought problems.					
19 I act on the spur of the moment.					
20 I am a steady thinker.					
21 I change residences.					

22 I buy things on impulse.					
23 I can only think about one thing at a time.					
24 I change hobbies.					
25 I spend or charge more than I earn.					
26 I often have extraneous thoughts when thinking.					
27 I am more interested in the present than the future.					
28 I am restless at the theatre or lectures.					
29 I like puzzles.					
30 I am future oriented.					

APPENDIX D

For each of the 13 items, **circle** the choice, **A** or **B**, that best describes your likes or dislikes, or the way you feel.

1.

A. I would like a job that requires a lot of traveling.

B. I would prefer a job in one location.

2.

A. I am invigorated by a brisk, cold day.

B. I can't wait to get indoors on a cold day.

3.

A. I get bored seeing the same old faces.

B. I like the comfortable familiarity of everyday friends.

4.

A. I would prefer living in an ideal society in which everyone is safe, secure, and happy.

B. I would have preferred living in the unsettled days of our history. 5.

A. I sometimes like to do things that are a little frightening.

B. A sensible person avoids activities that are dangerous.

6.

A. I would not like to be hypnotized.

B. I would like to have the experience of being hypnotized.

7.

A. The most important goal of life is to live it to the fullest and experience as much as possible.

B. The most important goal of life is to find peace and happiness. 8.

A. I would like to try parachute-jumping.

B. I would never want to try jumping out of a plane, with or without a parachute. 9.

A. I enter cold water gradually, giving myself time to get used to it.

B. I like to dive or jump right into the ocean or a cold pool.

10.

A. When I go on a vacation, I prefer the comfort of a good room and bed.

B. When I go on a vacation, I prefer the change of camping out.

11.

A. I prefer people who are emotionally expressive even if they are a bit unstable.

B. I prefer people who are calm and even tempered.

12.

A. A good painting should shock or jolt the senses.

B. A good painting should give one a feeling of peace and security.

13.

A. People who ride motorcycles must have some kind of unconscious need to hurt themselves.

B. I would like to drive or ride a motorcycle.

APPENDIX E

- For each of the 3 items, **TICK** the choice, that best describes your think.

OPTIONS →	Professional Degree	Graduate	Intermediate / Diploma	High School	Middle school	Primary school	Illiterate
Education of Head of the Family							
OPTIONS →	Professional	Semi professional	Clerical/ Shop/ Farm	Clerical/ Shop/ Farm	Semi-skilled worker	Unskilled workers	Unemployment
Occupation of Head of the Family							
OPTIONS →	2000 and above	Rs 1000 -1999	Rs 750-1000	Rs 500 - 749	Rs 300 - 499	Rs. 101- 299	Less than Rs 100
Total per capita family income per month							